Healthier Futures Academy
Black Country and West Birmingham

Working Together for a Healthier Post-COVID Future

A discussion document to promote whole-system action on the wider determinants of healthy life expectancy in the shadow of the COVID-19 pandemic

Black Country Consortium

Economic Intelligence Unit

The Strategy Unit.

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Executive Summary

In line with wider national drives towards inclusive growth and the extension of the role of 'anchor institutions', the Healthier Futures Academy has initiated the Wider Determinants of Healthy Life Expectancy (WHoLE) Programme. The purpose of the programme is to help local partner organisations:

- better understand their local populations in terms of the interactions between the wider context of their lives and their health;
- develop a set of priorities for action;
- engage relevant stakeholder and community groups; and
- co-design, and collaboratively implement and evaluate, projects relating to the social, economic and environmental circumstances in which people live to facilitate improved population health.

This discussion document and the accompanying resources represent the initial outputs of the WHoLE programme, developed for the Academy by The Strategy Unit and with additional analysis by the Black Country Consortium's Economic Intelligence Unit.

Explicitly intended to facilitate discussion with system partners and co-production with local communities, this work does not purport to offer off-the-shelf solutions to intractable social, economic and health challenges, neither does it represent the formal policy position of the Healthier Futures Partnership or any of its constituent organisations. Instead, it is an independent overview of local experience, international evidence and bespoke, high-level analysis to generate debate and decision about what an increased local focus on improving population health and wellbeing in the Black Country and West Birmingham (BCWB) should look like.

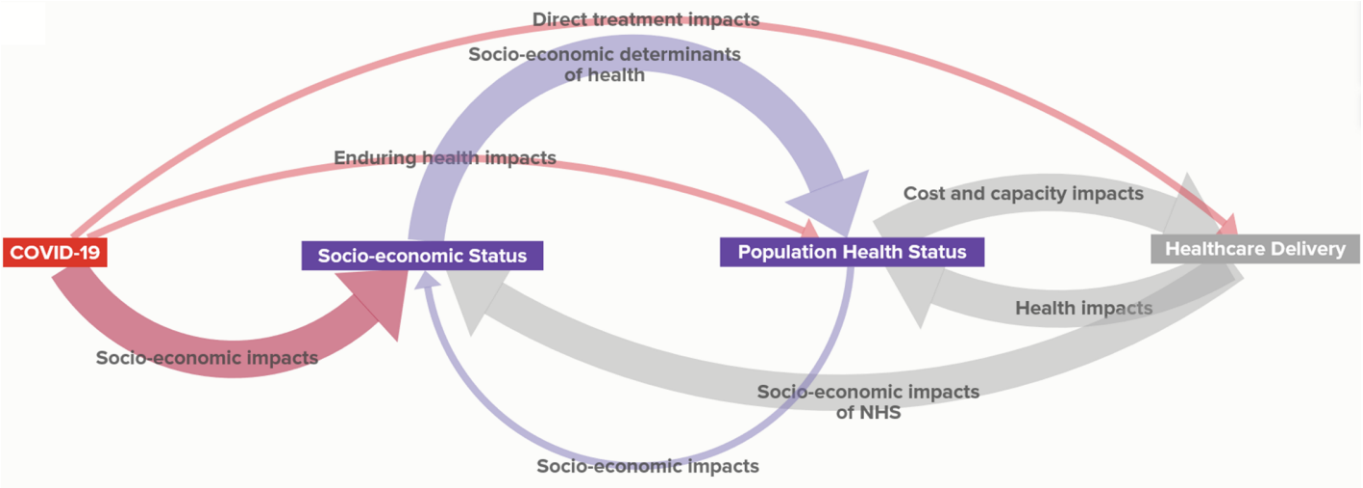

Figure 1 - Causal map

when the British economy sneezes, the NHS catches a cold[1]

What follows is no more and no less than the launchpad for a programme of targeted and collaborative engagement and action on the economic, social and environmental forces that shape our health, even more than do the lifestyle choices we make or the healthcare services available to us. The core logic of the WHoLE programme is represented in the causal map above (Figure 1) and summarised thus:

- Population health is determined by a wide range of factors including healthcare interventions and lifestyle choices. But we know that there are wider, socio-economic determinants of health that have a greater impact on the health of the population and the resulting demand for healthcare services. BCWB has existing challenges in relation to these determinants.
- There is evidence that COVID-19 is affecting the wider determinants of health and the consequent demand for services in an adverse manner and to a significant degree. This is in addition to the direct treatment and enduring health impacts of the disease.
- The NHS impacts population health status both directly through the care, treatment and medication it provides and indirectly through the way in which healthcare services are organised and healthcare resources invested.
- There are opportunities for the NHS, with local partners, to increase its impact as an anchor institution on the determinants of health, bringing greater benefits to local communities and limiting the adverse impacts of COVID-19.

Any adverse socio-economic impacts relating to COVID-19 will affect a context in the Black Country and West Birmingham that already has structural weaknesses including:

- The relatively low average income levels across BCWB (£4k below the national average) and the constrained ability to weather an economic crisis that accompanies this;
- The high numbers of children living in poverty (17.7% live in workless households and 28% in relative low income families);
- The already high rates of unemployment especially amongst
    - mixed ethnic groups (19.3% BCWB compared to 6.2% nationally) and the Pakistani/Bangladeshi population (12.9% BCWB compared to 8.9% nationally) and

[1] Sir Simon Stevens, Chief Executive, NHS England and NHS Improvement, speaking in 2016

  - 16-24 year-olds (males 15.6% compared to England 13.7%; females 13.0% compared to England 9.6%);

- The relatively low skills levels, especially in the White population;
- The relatively large proportion of 0-15 year-olds (21.5% BCWB, compared to 19.2% nationally) especially males - an age-group that will be seeking to enter the jobs market for the first time in the economic and social shadow of the COVID-19 pandemic;
- The relatively high proportion of the population that is economically inactive (i.e. neither in work nor seeking work), especially females aged 16-49 and across all ethnic groups except those of Indian ethnicity; and
- The high levels of air pollution, with 32% of neighbourhoods (LSOAs) in the 'worst' category nationally.

Illustrative, evidence-based modelling of three post-COVID scenarios undertaken by The Strategy Unit, using conservative assumptions, suggests that the unemployment rates in a COVID-related recession could lead to significant increases in healthcare activity levels during 2020-24.

- For physical health services relating to cardiovascular, musculoskeletal and respiratory conditions alone, activity levels are projected to remain above the 2019 baseline for the whole period. In the upside scenario, activity increases by 7% in 2020 before reducing to 5% then close to 2019 levels. In central and downside scenarios, the peak is in 2021 with 13% and 16% increases, respectively.

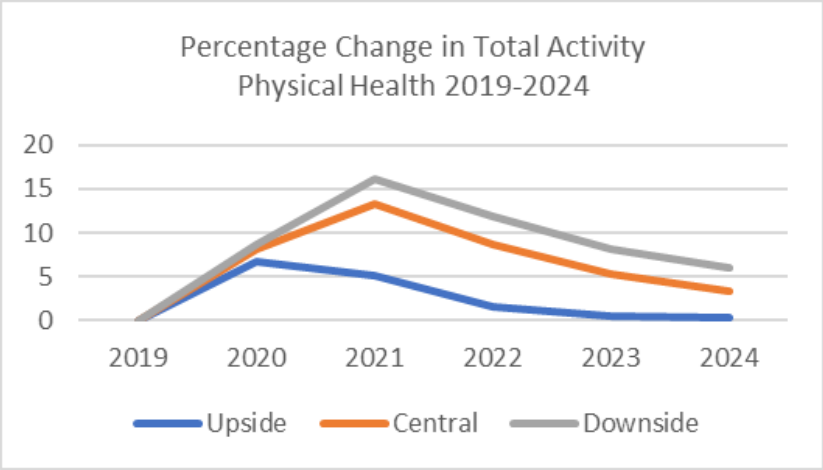

Figure 2 - Percentage change in total physical healthcare activity by scenario

The equity of access for different ethnic groups is hard to assess because of weaknesses in recording ethnicity in the activity data; there are some variations in activity level by place; and there are elevated activity levels amongst those in the lowest deprivation deciles (c.3% above the working age population proportion for those deciles).

- For mental health services, activity levels are also projected to remain above the 2019 baseline for the whole period but to a greater extent than physical health activity. In the upside scenario,

activity increases by 10% in 2020 and 2021 before reducing to 3% for the remainder of the period. In central and downside scenarios, the peak is in 2021 with 22% and 27% increases, respectively.

The equity of access for different ethnic groups is again hard to assess because of weaknesses in recording ethnicity in the activity data; there are some variations in activity level by place; and there are elevated activity levels amongst those in the lowest deprivation deciles. At 10% above the working age population proportion for those deciles, this deprivation impact is three times the level in mental healthcare activity than it is in physical healthcare activity.

In addition, a 4.45% increase would be expected in the suicide rate (4 additional deaths) along with an additional 160 suicide attempts.

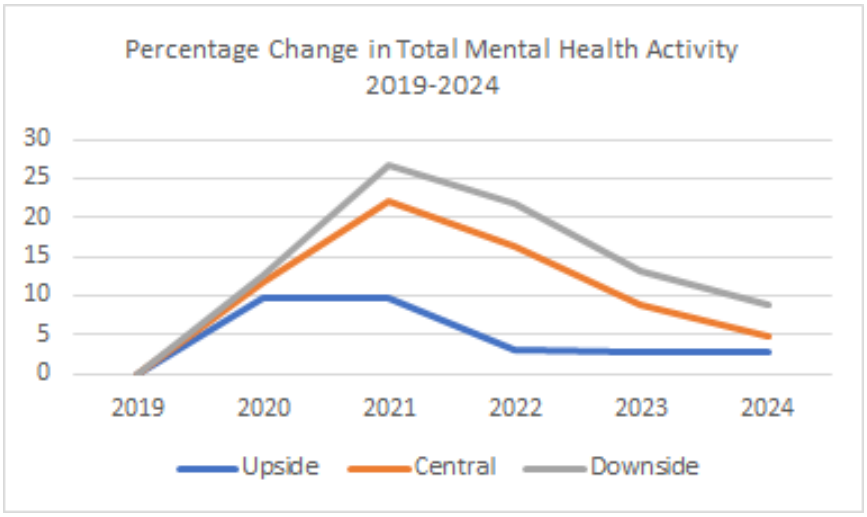

Figure 3 - Percentage change in total mental healthcare activity by scenario

Whatever the nature and extent of the additional healthcare demand created by the socio-economic fallout from COVID-19, one aspect of the NHS response alongside local partners will necessarily be to make changes to the capacity of services and to the models of care that shape those services (including the skill-mix of staff). Such supply-side actions are outside the scope of this report, as are demand-side responses linked directly to lifestyle choices, and the associated prevention activities. The findings reported here may, however, additionally be used to inform supply-side planning across the system. The focus of the WHoLE programme, by contrast, is on understanding and addressing the social, economic and environmental drivers of population health that may account for 50% of the determinants of health.

> *Health is often thought of as more of a concern for the NHS than for local government, but in reality, local government has an even greater potential to influence health improvement than does the NHS. As was quoted in the recent All Parliamentary Report on longevity: "We have been caught in a false view that our national health means the NHS."*[2]

[2] https://www.local.gov.uk/sites/default/files/documents/22.52%20Social%20Determinants%20of%20Health_05_0.pdf

What can the NHS, in a genuine and close collaboration with local government and other partners, actually do to impact these indirect drivers of population health? In fact, local NHS and other partner organisations are already acting to impact the wider determinants of health in a wide variety of ways. Examples of such action are set out below (The Opportunities for 'Anchor Institutions'), alongside evidence of effective interventions, and are linked to the five areas for potential action identified by the Health Foundation (Figure 4).

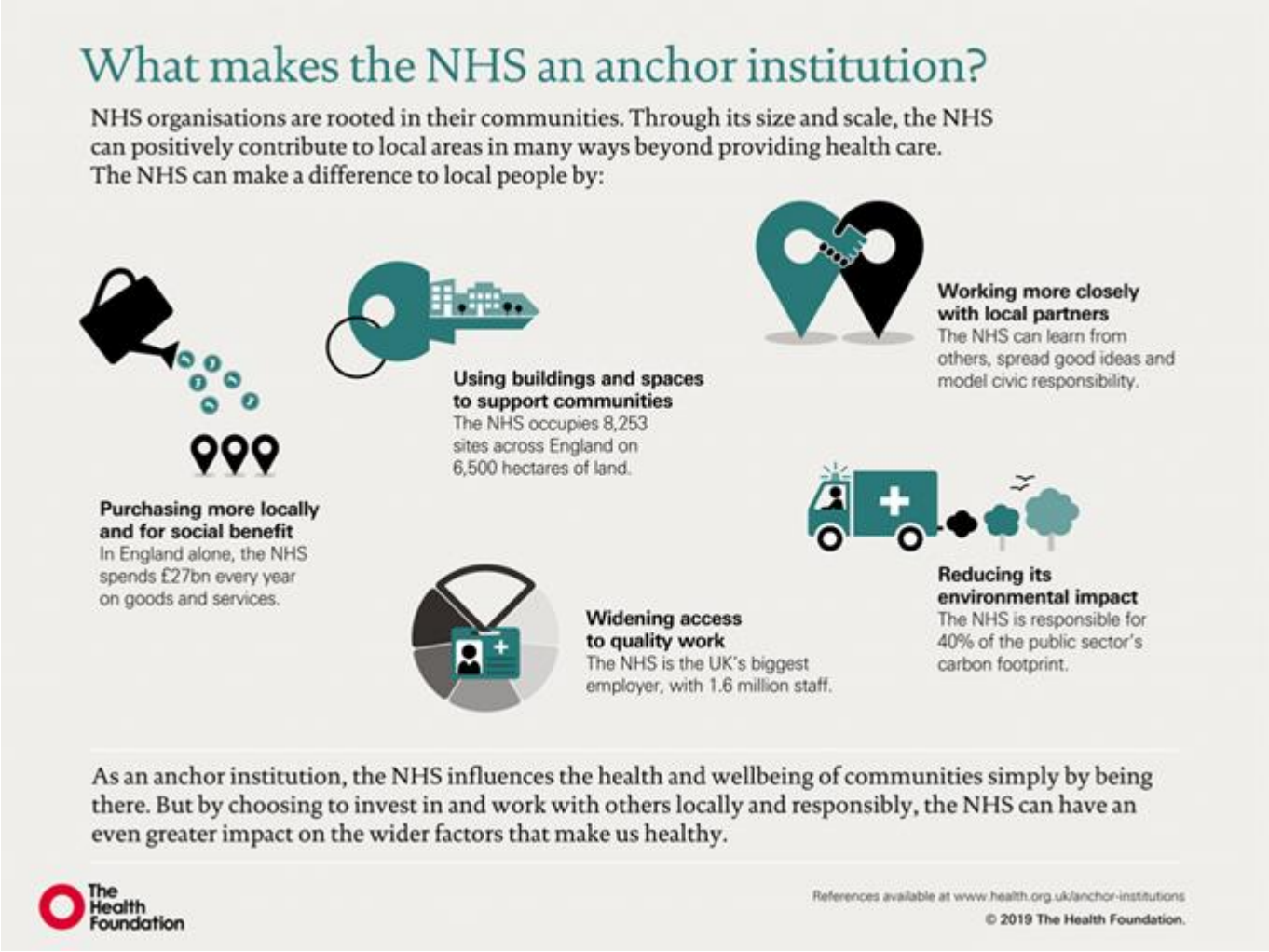

Figure 4 - What makes the NHS and anchor institution?

The challenge now is to redouble collaborative efforts to identify and act on opportunities to improve the circumstances that influence the health of our populations more materially than the healthcare we provide. Prior to COVID-19, the evidence and the need were already clear. In the shadow of COVID, the evidence suggests that healthcare needs will materially increase, bringing further challenge to the lives of our citizens and significant additional demand pressures on already stretched healthcare services.

Although these dynamics have long been known within the NHS, at least at a superficial level, the NHS has not yet played as full a part as it might in impacting the factors that shape population health, given

its social and economic impact in the local economy. The lead role that other bodies play in relation to this agenda, especially Local Authorities, is well recognised, as is the significance of other local anchors such as educational institutions, emergency services and other public bodies. The challenge for local NHS organisations is to better understand the socio-economic impact of their decisions (past and present) and then to use that understanding to energise and inform collaborative working with local partners. The challenge for those partners is to be open to that collaboration and to help NHS organisations discover how they can realise their potential as economic actors and become fuller partners in all aspects of inclusive local growth, thereby improving the healthy life expectancy of local populations through impacting the socioeconomic determinants of health as well as through healthcare delivery. Collaborative action at scale will have greater impact than isolated initiatives at the margins.

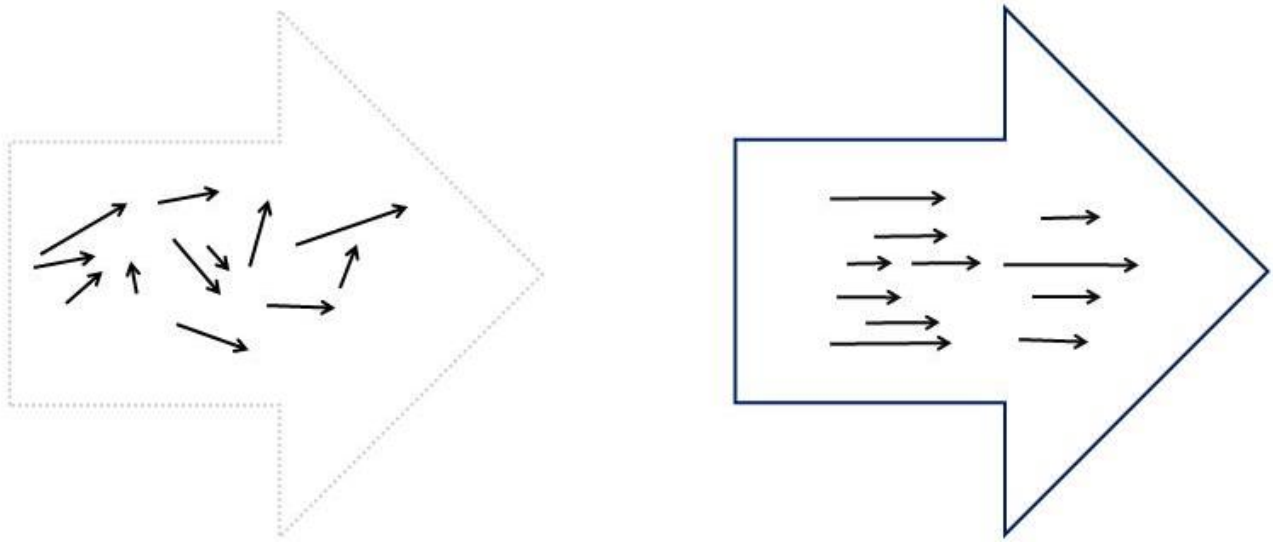

Figure 5 - The benefit of collaborative action

To facilitate this increased collaboration, the publication of this discussion document will be followed by two months of engagement with system partners in Local Authority Health and Wellbeing Boards, Healthier Futures partner organisations in the NHS and local government, and the local voluntary and community sector. Whilst detailed public engagement is largely intended for Phase 2, versions of this report will be made available to the public. Going forward, the governance of the programme is expected to sit with the Health Inequalities Board of the Healthier Futures Partnership. There are two aims of this engagement:

- To increase understanding of the interactions between the contexts in which citizens live (social, economic, environmental) and their health; and
- To inform the recommendation of priority areas for whole-system action in Phase 2 of the programme. These are expected to be determined by the Healthier Futures Partnership Board in January 2021, following the proposed engagement.

There are four key questions to be explored in this initial engagement. These relate to a framework for discussion and action that has been developed on the basis of the evidence and analysis presented in this report (Table 1):

	Education and Skills	Employment and Income	Community and Environment
County Health Ranking Weightings *(as % of the determinants of health)*	• 5% high school graduation (~5 GCSEs at C or above) • 5% some college education	• 10% unemployment • 10% children in poverty	• 2.5% air pollution – particulate matter • 2.5% inadequate social support
Marmot Recommendations	• Giving Every Child the Best Start in Life • Enabling all Children, Young People and Adults to Maximise their Capabilities and Have Control over their Lives	• Creating Fair Employment and Good Work for All • Ensuring a Healthy Standard of Living for All	• Create Healthy and Sustainable Places and Communities
Target Socio-economic Outcomes	• Greater school readiness • Better skills and qualifications	• Fuller employment in better jobs • Higher incomes	• Better environments (social, economic, physical and natural)
Potential Intervention Mechanisms	• Increasing early years access and support • Reducing child poverty • Increasing pay and qualification requirements for the childcare workforce • Improving pupils' physical and mental wellbeing	• Becoming living wage employers • Investing more in local procurement (including local employment and living wage jobs) under the 2012 Social Value Act • Increasing higher value apprenticeships and in-work training • Developing new roles and training paths in public sector professions	• Increasing the resilience of local communities and their economic, social and cultural assets • Improving air quality in line with national and local net zero targets • Increasing the quality and affordability of stable housing • Ensuring best value is being realised from public sector land and buildings
Available Public Sector Tools	• Adjusting public sector service models to increase wider socio-economic benefits and to reduce inequalities • Enhancing how potential and existing public sector staff (and the employees of public sector contract holders) are nurtured, recruited, trained and supported • Deriving greater socio-economic benefit from public sector financial and physical resources (including in the supply chain)		
Candidate Interventions	• *To be co-produced in Phase 2*		

Table 1 - Framework for discussion and action

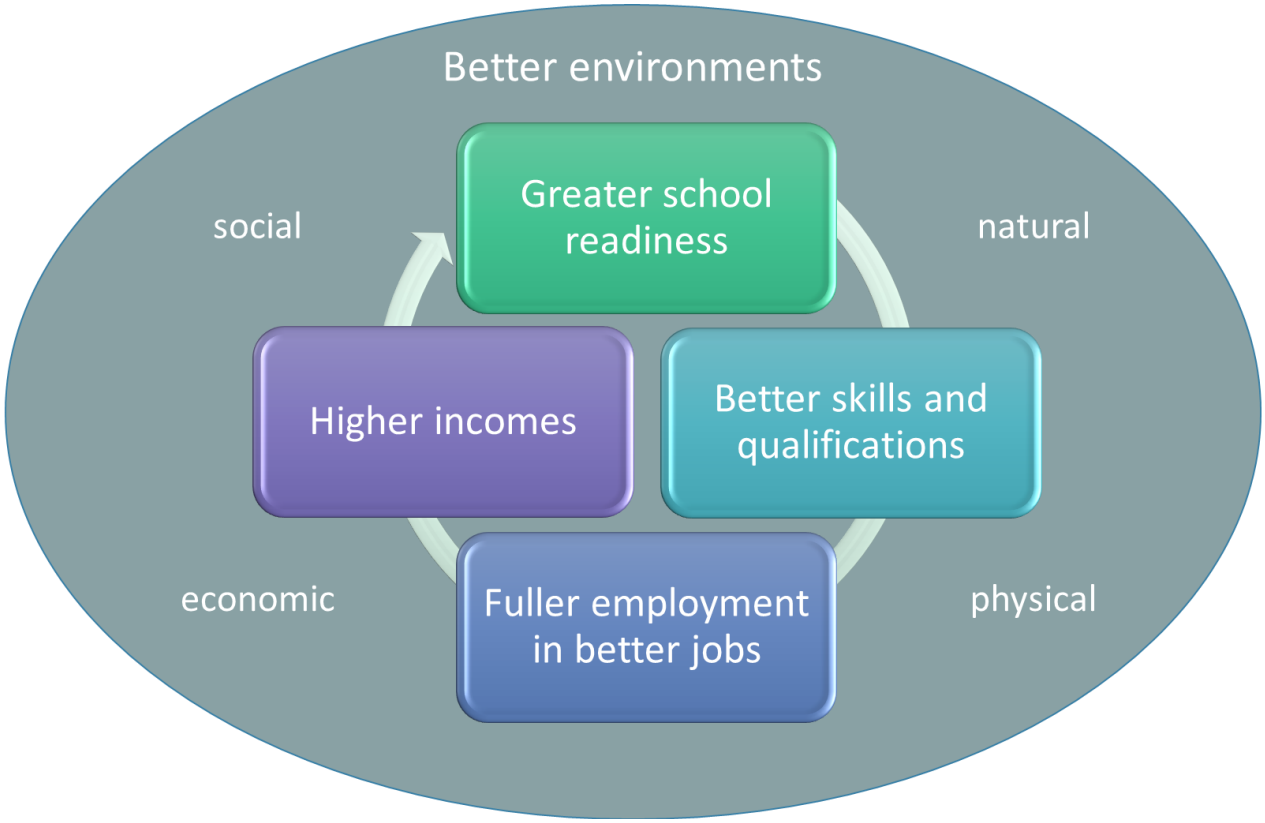

Figure 6 - Illustration of relationship between target outcomes

1. **What priority should be given to each of the target socio-economic outcomes, and why?** Action in relation to any outcome will bring benefits in others, given how closely they are related, but some may have the potential to do this to a greater extent than others. Each also has the potential to improve healthy life expectancy. This is a question about where best to intervene in the cycle (see Figure 6).
2. **Are there additional intervention mechanisms that should be considered for realising the target outcomes?** These must be mechanisms that can be affected by the tools available to public sector organisations.
3. **What specific candidate interventions might be considered?** This is a question about the action local partners could consider taking together.
4. **Are there specific population cohorts (e.g. age groups, genders, ethnicities, deprivation quintiles, other groups) that whole-system action should focus on?** The differential needs and experiences of such groups should be considered equitably in relation to any candidate intervention, but the evidence presented above, and local experience, may suggest a case for an enhanced focus on certain cohorts.

Initial citizen engagement around these themes was conducted through the Healthier Futures Partnership's Citizen Voices Panel in September 2020 (Appendix Three – Citizen Panel Survey Data). Those who responded were largely from the Dudley and Sandwell and West Birmingham CCG areas

(84%), of White ethnicity (88%), female (66%) over 40 years of age (59%, 25% were in the 60-74 age group), and from a broad range of geo-demographic categories. The relatively unrepresentative nature of the self-selected respondents inhibits a demographic analysis of the results. The survey found that:

- The socio-economic determinants that reportedly affect respondent's **physical health** a lot (pre-COVID) are low income (22%), lack of work (16%) and poor or no housing (15%).
- Similarly, though to a greater degree, the socio-economic determinants that reportedly affect respondent's **mental health** a lot (pre-COVID) are low income (28%), lack of work (21%), crime or experience of the justice system (17%) and poor or no housing (12%).
- The aspects of life that had been significantly affected by the **COVID-19** pandemic and association policy measures were reported to be respondents' mental health (40%), close relationships (23%), education (20%) and income (20%). Only two panel members knew they had had COVID-19.
- Looking to the **future**, albeit through COVID glasses –
    - respondents' main concerns related to not being able to meet people because of COVID (26%), losing and/or not being able to find work (18%), and coping with low pay (14%), and
    - the external factors that respondents felt would most benefit their physical and mental health were income (23%), employment (23%) and skills/qualifications (8%).

These findings broadly align with the target outcomes identified above, and the evidence and analysis presented elsewhere in this report. In particular, there is a recurring focus on the significance of employment and income. The survey data also provides further evidence of the effects of COVID on mental and physical health, both directly through experience of or anxiety around the disease and indirectly through its impact on the key socio-economic determinants of health.

In addition to specific population-focused projects that are expected to emerge in Phase 2, consideration should also be given to the development of a WHoLE appraisal framework and WHoLE dashboard to inform system focus and decision-making. Operating in a manner similar to the New Zealand Treasury's ***Living Standards Framework***[3], it would enable the wider determinants of health and wellbeing to be monitored and to be used alongside other established quality and financial measures in determining courses of action. This would be particularly value in a context where some of the interventions that might be considered may have higher initial costs for one or more partner organisation but which, when seen in wider perspective, offer greater longer term benefits. Effective links should also be made within Healthier Futures structures between interventions to address the wider determinants of health and those focused on carbon reduction since, in many cases, there will be significant complementarity.

Organizational and sectoral boundaries encourage siloed decision-making, and in ways that risk depriving our communities of both socio-economic and health benefits. Developing a whole-system

[3] https://lsfdashboard.treasury.govt.nz/wellbeing/

framework, reflecting the evidence summarised in this discussion document, could enable system partners to assess the whole-system impact of their decisions and to consider more holistically what makes for the common good.

Introduction

The WHoLE Programme

This report is the initial output of the Wider Determinants of Healthy Life Expectancy (WHoLE) Programme, one of the priority initiatives of the Healthier Futures Academy that has been established in the Black Country and West Birmingham (BCWB)[4] to provide population health management, service redesign and workforce transformation capacity across the Healthier Futures Partnership. The Academy has established a support partnership with The Strategy Unit to access expert advisory, research and analytical capability.

The purpose of the WHoLE programme is to significantly expand on existing initiatives (see The Opportunities for 'Anchor Institutions') by working with local citizens and public, private and charity sector bodies to:

a) establish a whole-system culture and approach that promotes greater understanding of the wider socioeconomic determinants of population health specific to BCWB;

b) establish effective collaborative action with system partners that increases the beneficial impact of those determinants; and

c) generate new learning in respect of such action that adds to the local, national and international evidence base; and

d) inform the future role and functions of the single strategic commissioner for the system.

To achieve this aim, the programme has been tasked with:

i) rapidly researching, mapping and modelling the **dynamics** likely to shape population health need in the BCWB over the medium to long term (c.1-5 years), specifically factoring in the potential impact of COVID-19 on the socioeconomic determinants of health;

ii) identifying potential **levers and areas of opportunity** in relation to which a range of interventions can be considered;

iii) engaging with **stakeholders** to create a societal conversation across the system (LA members and officers, NHS leaders and wider workforce, other public and third sector agencies, citizens, MPs, etc.), to harvest insights and ideas, and to influence understanding and action; and

iv) designing, appraising, implementing and evaluating **interventions** focused on improving the wider socioeconomic determinants of health.

[4] The area covered by the Healthier Futures partnership and the four NHS Clinical Commissioning Groups: https://www.healthierfutures.co.uk/

This report, and the underpinning evidence, analysis and modelling tools, address the first two items above and provide a launchpad for the more practical phases of the WHoLE programme that follow.

The formal governance of the programme sits with the Healthier Futures Partnership Board, through its new Academy function. This first phase of work has been resourced through the Strategy Unit and with invaluable support from the Economic Intelligence Unit at the Black Country Consortium.[5]

An expert advisory group (see Appendix One – WHoLE Programme Expert Advisory Group) has also been established to support the aims and objectives of the programme through providing advice and guidance in relation to:

1. The validity and robustness of the **approaches** proposed for delivering programme objectives;
2. Making **connections** with relevant local issues, opportunities or organisations that could enhance programme effectiveness;
3. The form and content of programme **outputs**, to ensure maximum impact;
4. The nature and scope of **interventions** to be considered in phase 2.

The Black Country and West Birmingham

In 2018, there were 1,370,653 people living in BCWB geography, of whom 21.5% were aged between 0-15 years old (19.2% for England) and 16.3% were aged 65+ (18.2% for England). Numbers of men and women are roughly equal overall, although there is a greater proportion of males in the 0-15 age bracket and a greater proportion of females aged 65 years and over.

The 2011 Census indicates that 29.3% of the population is classed as Black, Asian and Minority Ethnic (BAME), double the England average of 14.6%. The largest single BAME population is Asian/Asian British (18.4%), followed by Black/African/Caribbean/Black British (6.1%), and Mixed/Multiple ethnic groups (3.4%).

Nearly half of the population (48.4%) lives in communities that are amongst the 20% most deprived nationally. The average life expectancy at birth in BCWB is 80.8 years for men and 84.4 years for women. Those in contact with mental health services have a life expectancy 18.4 and 15.2 years shorter, respectively, than the rest of the local population.[6]

Healthy life expectancy (HLE) - the average number of years that an individual is expected to live in a state of self-assessed good or very good health - is lower for all parts of BCWB compared to the national average (Figure 7). These low rates generally correlate with a range of other factors (Figure 8). Walsall has the lowest female HLE in BCWB, Sandwell and West Birmingham the lowest male HLE, and Dudley the greatest HLE inequity.

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[5] Particular thanks are due to Alison Turner and Anastasiia Zharinova of The Strategy Unit, and to Megan Boehm and Delma Dwight of the Black Country Consortium's Economic Intelligence Unit.

[6] http://www.strategyunitwm.nhs.uk/publications/making-case-integrating-mental-and-physical-health-care-full-report, data from 2012-2015

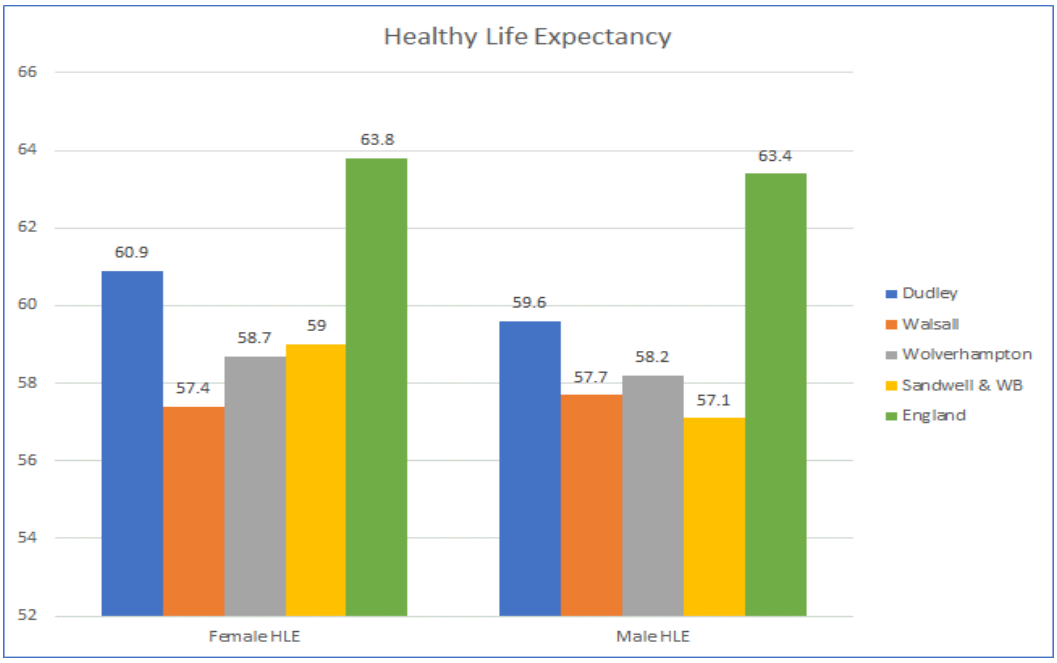

Figure 7 - Healthy life expectancy in the Black Country and West Birmingham

Figure 8 - Factors correlating with healthy life expectancy

Previous analysis of Public Health England (PHE) data[7] by local teams, found that:

- Mortality from conditions considered preventable is relatively high and there is a high prevalence of long-term conditions, especially in relation to hypertension, diabetes, chronic kidney disease, chronic heart disease, depression, and dementia.
- BCWB has some of the highest infant mortality rates in the country - smoking rates in pregnancy remain high, and breast-feeding rates are low. By the time a child starts school, they are much less likely to be ready for school than in other areas. Starting school ill-prepared makes it more difficult to catch up later and has lifelong consequences.
- Both child and adult obesity rates are high, whilst physical activity levels are relatively low, and unhealthy fast food is easily available. This increases the risk of diabetes and other weight-related conditions prematurely.
- Rates of hospital admission relating to alcohol consumption or as a result of violence are high, and many users of adult social care say they feel socially isolated and experience poor health-related quality of life.
- Rates of falls and hip fractures in older people are high, as are households living in fuel poverty meaning people are exposed to the risk of cold housing in winter exacerbating long-term conditions.

The Healthier Futures Partnership across BCWB has recognised the need for collaborative action on the wider determinants of health, and individual organisations are already active in this area (see The Dual Impact of the NHS).

> *If we are to stand any chance of improving the health of our population, we have to focus at least as much attention on the factors outside the health (and social care) system that are leading to poor health as those factors within the health sector that influence health. For example a ten percent increase in unemployment is associated with a reduction in life expectancy of a year… and a ten percent increase in the rate of housing deemed unfit for habitation is associated with a reduction in life expectancy of two months.*
>
> BCWB Clinical Strategy

> *The future of healthcare in England lies in shifting our focus from responding to individual ill health to improving population health and wellbeing. This requires a collaborative approach with our wider system partners across the public and third sectors.*
>
> BCWB Draft Strategic Plan

The urgency of this need has increased materially as a result of the health and socioeconomic impacts of COVID-19, especially in areas like BCWB that already faced significant health and socioeconomic challenges and which are likely to be especially vulnerable to a post-COVID economic downturn.

[7] https://fingertips.phe.org.uk

The Determinants of Health

Population health is determined by a wide range of factors including healthcare interventions and lifestyle choices. But we know that there are wider, socio-economic determinants of health that have a greater impact on the health of the population and the resulting demand for healthcare services. BCWB has existing challenges in relation to these determinants.

> *People with a higher socioeconomic position in society have a greater array of life chances and more opportunities to lead a flourishing life. They also have better health. The two are linked: the more favoured people are, socially and economically, the better their health. This link between social conditions and health is not a footnote to the 'real' concerns with health – health care and unhealthy behaviours – it should become the main focus.*
>
> Fair Society, Healthy Lives[8]

There is growing recognition of the broader factors which influence our health and wellbeing. According to the Health Foundation, the quality of, and access to, health care is estimated to account for 10-20% of what contributes to people's health.

> *Rather than being something people just get at the doctor's or at hospital, health is something that starts in families, schools, communities and workplaces. It can be found in parks and in the air people breathe. The other factors that influence health – the social determinants – affect people in different ways, according to factors like age, gender, ethnicity, sexuality and disability. And they don't operate in isolation. Rather, they are intricately woven together in a dynamic and mutually reinforcing way.*[9]

The County Health Rankings Model[10] that proposes evidence-based weightings for the influence of a range of factors assigns 50% of the influence on health outcomes to the socioeconomic and environmental factors that are the focus of the WHoLE programme.[11]

What follows is not a comprehensive analysis of all the defined wider determinants of health but a focused approach concentrating on the determinants that are likely both to be amongst the most significant of those determinants for BCWB, and to be most vulnerable to the impacts of the COVID-19 lockdown and recession. A key focus becomes the impact of unemployment and income which in the County Health Rankings model account for 20% of the determinants of health.

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[8] http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review. See also https://www.health.org.uk/funding-and-partnerships/our-partnerships/health-equity-in-england-the-marmot-review-10-years-on

[9] https://www.health.org.uk/publications/what-makes-us-healthy

[10] https://pophealthmetrics.biomedcentral.com/articles/10.1186/s12963-015-0044-2

[11] A summary of other evidence-based estimates of the relative impact of healthcare and other determinants of health can be found here: https://www.local.gov.uk/sites/default/files/documents/22.52%20Social%20Determinants%20of%20Health_05_0.pdf p.6.

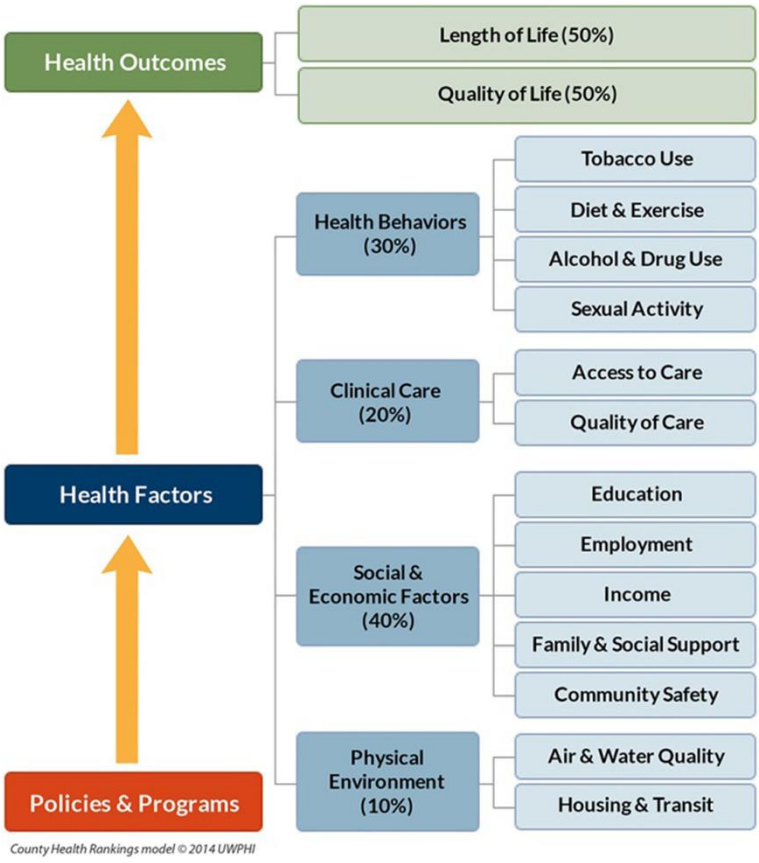


Figure 9 - County health rankings model

In what follows, we summarise relevant socio-economic data and the international evidence-base. The former is extracted from a report kindly provided by the Economic Intelligence Unit at the Black Country Consortium, and the latter from a rapid evidence analysis by The Strategy Unit. These underpinning documents are separately available. For ease of reader access, references and links in the text below are to the original sources.

Education and skills

Poor educational achievement is one of the strongest predictors of low healthy life expectancy, and a bad educational start in life fuels a trajectory of reduced educational attainment and weaker prospects. The County Health Rankings Model suggests that education accounts for a tenth of the determinants of health. Population data strongly suggests that in certain areas there is a cycle of poor educational attainment, with the associated consequences being repeated generation after generation. Low levels of school readiness are associated with low income and/or lone parent families, and high rates of teenage pregnancy, deprivation, and long term conditions, especially obesity, diabetes, coronary heart disease and depression.

Analysis by BCWB Clinical Commissioning Groups (CCGs) reveals that for every percentage point increase in children not school-ready there are decreases in key stage 2 attainment (0.7%), in the

proportion achieving 5 or more GCSEs (1.18%) and in individual achievement across 8 qualifications (0.7%), and that there is an increase in the proportion of the adult population who have no formal qualifications (1.1%). For every percentage point increase in the proportion of the adult population without formal qualifications there is a 0.5% increase in income deprivation, an increase in unemployment (2.2%), an increase in reception age obesity (1.1%) and a reduction in average HLE (8 months).

In BCWB, there is a high proportion of people with low qualifications or none, especially amongst men. For level 4 qualifications (first or higher degree, professional qualifications or equivalent) Asian and Black populations outperform while White and Mixed populations underperform, with the reverse being true at lower levels. The apprenticeship level is dominated by the White population (90% from a 70% cohort), although current apprenticeship starts are more in line with population size. The Mixed ethnic group underperforms pro rata at all levels except apprenticeship starts.

	Apprenticeship starts 2018/19	BCWB Population	No Quals	Level 1	Level 2	Apprenticeship level	Level 3	Level 4	Other quals
White	73.3%	70.7%	78.6%	73.5%	76.2%	89.4%	73.7%	67.2%	55.1%
Mixed/multiple ethnic group	5.0%	3.4%	1.6%	3.1%	3.2%	1.5%	3.0%	1.9%	1.5%
Asian/Asian British	13.9%	18.4%	14.7%	16.1%	13.0%	5.4%	15.4%	21.2%	32.8%
Black/African/Black British/ Caribbean	6.9%	6.1%	4.0%	6.2%	6.7%	3.3%	6.8%	7.9%	7.1%
Other ethnic group	0.8%	1.4%	1.2%	1.1%	0.9%	0.4%	1.1%	1.8%	3.5%

Table 2 - Qualification levels by ethnic group

Digital skills are becoming increasingly important, both for the workplace and for accessing public and commercial services. Whilst BCWB has good digital access, with 97.9% new generation broadband coverage, and the numbers of those not accessing the internet in the last three months continues to decline, the area does have digital vulnerabilities.

	Birmingham	Dudley	Sandwell	Walsall	Wolverhampton
Likelihood of digital exclusion	Medium	Medium	Medium	High	High
Not online in last 3 months	11.20%	14.20%	11.80%	13.50%	13.90%
All 5 basic digital skills	77%	77%	76%	76%	77%
Used all 5 basic skills in last 3 months	39%	42%	37%	38%	40%
Long term condition/ disability	18.40%	20.30%	20.90%	20.80%	20.50%

Table 3 - Digital literacy in BCWB, Source: British Red Cross, 2020

Digital exclusion is the inability to access online products or services or to use simple forms of digital technology. This disproportionately affects vulnerable people, low-income groups, the elderly and

marginalised communities, creating a strong correlation between digital exclusion and social exclusion.

The adverse consequences of poor educational achievement pass down the generations. Living in poverty as a child increases the risk of having low attainment at school; adults in poverty or in low-paid jobs are less likely to receive training and to progress into better jobs than those who are better paid; and young people from poorer backgrounds are around a third less likely to achieve good qualifications at age 16.

Digital Literacy Case Study

'Helen' was referred to the Integrated plus High Intensity User (HIU) project due to having multiple attendances at A&E. This was proving to be expensive for the NHS and there was no further support clinical staff could offer. She was struggling with her mental health and felt safe at the hospital. 'Helen' felt that her anxiety was taking over everything that she did, and she just wanted to feel well and enjoy life.

After being visited by a HIU Link Worker who listened to her story, it was very clear she enjoyed helping people and having a purpose. 'Helen' spoke about how much it had helped in the past when she had volunteered at different charity shops in Dudley, and she said she had always wanted to become a hospital volunteer with a view to getting back into employment in the future. The application forms were all being done online, however, and 'Helen' felt she couldn't apply because she wasn't computer literate. She felt there were a lot of opportunities she had missed out on in the past due to not being able to use a computer.

With support, 'Helen' was able to complete the online application which led to her attending an online interview with the help of the Link Worker. She was successful in securing a position as a volunteer and has continued to make progress, giving her confidence and having a positive impact on their mental health and wellbeing.

Employment and income

Guidance from Public Health England (PHE)[12] highlights four links between employment and health:

- physical work conditions
- psychosocial work conditions
- poor pay or insufficient hours
- temporary or insecure work and redundancy.

[12] http://www.instituteofhealthequity.org/resources-reports/local-action-on-health-inequalities-promoting-good-quality-jobs-to-reduce-health-inequalities-

It estimated that, in 2014, 1.2m people in Britain, especially those in manual work, had an illness or health condition linked to historic or ongoing work experience. The most common health impacts relate to musculoskeletal disorders and mental health.

High levels of stress at work have been found to be nearly twice as high for BAME workers than amongst White workers, and the adverse impacts of poor quality work are more likely to be felt by those with a lower socioeconomic position, younger people, those in lower paid jobs and BAME citizens.[13]

Research for the Institute of Fiscal Studies has found a clear, counter-cyclical relationship between employment and health conditions, particularly in relation to mental health, musculoskeletal, cardiovascular, and respiratory conditions, and with the health condition impact taking between 1 and 5 years to reach its peak.[14]

A further review based on the 2008 recession, which also found that health impacts take many years to become fully apparent, identified the crisis as a serious threat to children's health, particularly impacting more vulnerable groups.[15] When money is short, food insecurity increases and access to healthy diets is reduced.[16] Marmot highlights how:

- *Stress, depression and anxiety associated with food insecurity affect more than half of households who are referred to food banks and a quarter of households have a member with a long-term physical condition or illness in 2018.*
- *Children who grow up in food-insecure homes are more likely to have poor health and worse educational outcomes compared with children growing up in food-secure homes.*
- *Between 2004 and 2016 food insecurity among low-income adults rose from 28% in 2004 to 46% in 2016. Between 8 and 10% of households in the UK were food-insecure between 2016 and 2018, experiencing poor physical and mental health as a result.*
- *The poorest 10% of English households would need to spend close to three-quarters of their disposable income on food to meet the guidelines in the NHS's Eatwell Guide, compared with only 6% of income for households in the richest decile shown.*[17]

Psychological problems are twice as prevalent amongst the unemployed, who also experience higher mortality. There were 1000 excess deaths by suicide in the 2 years after the financial crash.[18] Economic recessions increase vulnerability to common mental disorders, substance disorders, and suicidal behaviour, with potential long-term impacts for children and young people in families

[13] https://www.health.org.uk/publications/reports/the-marmot-review-10-years-on
[14] https://www.ifs.org.uk/publications/14807
[15] https://www.mdpi.com/1660-4601/11/6/6528
[16] https://academic.oup.com/eurpub/article/27/suppl_4/18/4430523
[17] https://www.health.org.uk/publications/reports/the-marmot-review-10-years-on
[18] https://www.sciencedirect.com/science/article/abs/pii/S0140673613601026

affected by unemployment or poverty.[19] The risks of poor mental health as a result of austerity are heightened for those in the most deprived, least educated groups.

In BCWB, before COVID (2019 data), 73.4% of the population was economically active, of which 6.7% was unemployed, compared with a national rate of 4% (3.9% as of March 2020). Amongst 16-24 year olds, local rates were much higher at 15.6% for males and 13.0% for females (13.7% and 9.6%, respectively, across England). There were significant differentials in unemployment rates by ethnicity, with an extremely high figure for residents from the Mixed ethnic group:

Ethnic group	BCWB unemployment rate (%)	England unemployment rate (%)	Difference (%)
All	*6.7*	*3.9*	*2.8*
Mixed ethnic group	19.3	6.2	13.1
Pakistani/Bangladeshi	12.9	8.2	4.7
Other ethnic group	11.6	6.8	4.8
Black or Black British	9.7	8.1	1.6
White	5.5	3.5	2.0
Indian	4.5	3.9	0.6

Table 4 - Unemployment rates by ethnic group

Of the 26.6% economically inactive, 31.4% were caring for home and family and 24.3% were sick, with the remainder being students (including 16-18 year olds in education) or retired. The rate of economic inactivity is highest (52%) amongst 16-24 year old females. Economic inactivity is correlated with poor healthy life expectancy.[20]

Despite the economic challenges of the area, and the evidenced links between economic challenges and mental health prevalence, only 5% of working age adults were accessing secondary mental health services, compared with 8% nationally. The reasons for this are not clear.

The average annual earnings in BCWB were c.£4k below the England average: the gap was smaller for women but larger and deteriorating for men. Although fuel poverty was reducing at a faster rate than nationally, the BCWB rate (12.4%) still exceeded the national level (10.3%). Many local children grow up with the consequences of economic challenges: 17.7% live in workless households and 28% in relative low income families.

Retail employment is relatively high for BCWB residents as is advanced manufacturing, environmental technology, and transport technology, though on a smaller scale. Retail, public sector, health and advanced manufacturing make more of a contribution to the BCWB economy than they do nationally. The average GVA per hour for BCWB increased by 4.2% between 2017-2018 but remained significantly lower than the England average (£21,532 and £29,356, respectively). Between 46% and 62% of residents work within their home authority area, more so in the Black Country LEP (76%) than in the Birmingham LEP (61%).

[19] https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-2720-y
[20] BCWB CCG data

The top 5 BCWB sectors are:

Sector	BCWB GVA (%)	England GVA (%)	BCWB jobs (%)	England jobs (%)
Business services	31.1	42.1	24.0	25.4
Retail	12.4	10.7	17.2	15.3
Public sector	14.4	10.8	14.2	15.3
Advanced manufacturing	14.5	11.7	13.7	10.4
Health	10.6	7.4	12.7	12.9

Table 5 - GVA and jobs by sector

BCWB jobs have a higher risk of automation than nationally because skills levels are generally lower. Most regions with a low probability of automation are concentrated in the South East of England and London.[21]

Local authority	Probability of automation	Proportion of jobs at Low Risk (<30%) of automation 2017	Proportion of jobs at Medium Risk (30-70%) of automation 2017	Proportion of jobs at High Risk (>70%) of automation 2017
Birmingham	46.0%	26.7	65.9	7.5
Dudley	48.1%	19.6	71.5	8.9
Sandwell	50.3%	16.7	72.0	11.2
Walsall	47.5%	21.3	70.4	8.3
Wolverhampton	49.1%	17.5	74.3	8.2

Table 6 - Probability and risk of automation by local authority

Housing

There are two particular aspects of the impact of housing on population health that we consider here: the quality of the indoor environment and the security of housing provision.

The mechanisms through which the indoor environment of the housing stock impacts health are set out in the figure below.[22] It illustrates how indoor temperature, air quality and physical conditions affect morbidity and mortality from cancer and cardiorespiratory illness.

- 12% of new childhood asthma cases are estimated to relate to exposure to indoor mould, leading to 55,842 potentially avoidable disability-adjusted life years (DALY) and 83 potentially avoidable deaths per year.

21 https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/theprobabilityofautomationinengland/latest#findings-from-the-office-for-national-statistics-ons-approach

22 http://www.instituteofhealthequity.org/resources-reports/inherit-baseline-report/inherit-baseline-report.pdf

- 15% of new childhood asthma cases are estimated to relate to exposure to indoor dampness, leading to c.69,462 potentially avoidable DALYs and 103 potentially avoidable deaths per year.
- 12.8 excess deaths per 100,000 population across Europe are estimated to result from indoor cold, representing 38,200 excess winter deaths each year in 11 European countries.
- every £3 invested in reducing housing hazards would save £2 in medical costs within a year, and with a recurring impact.

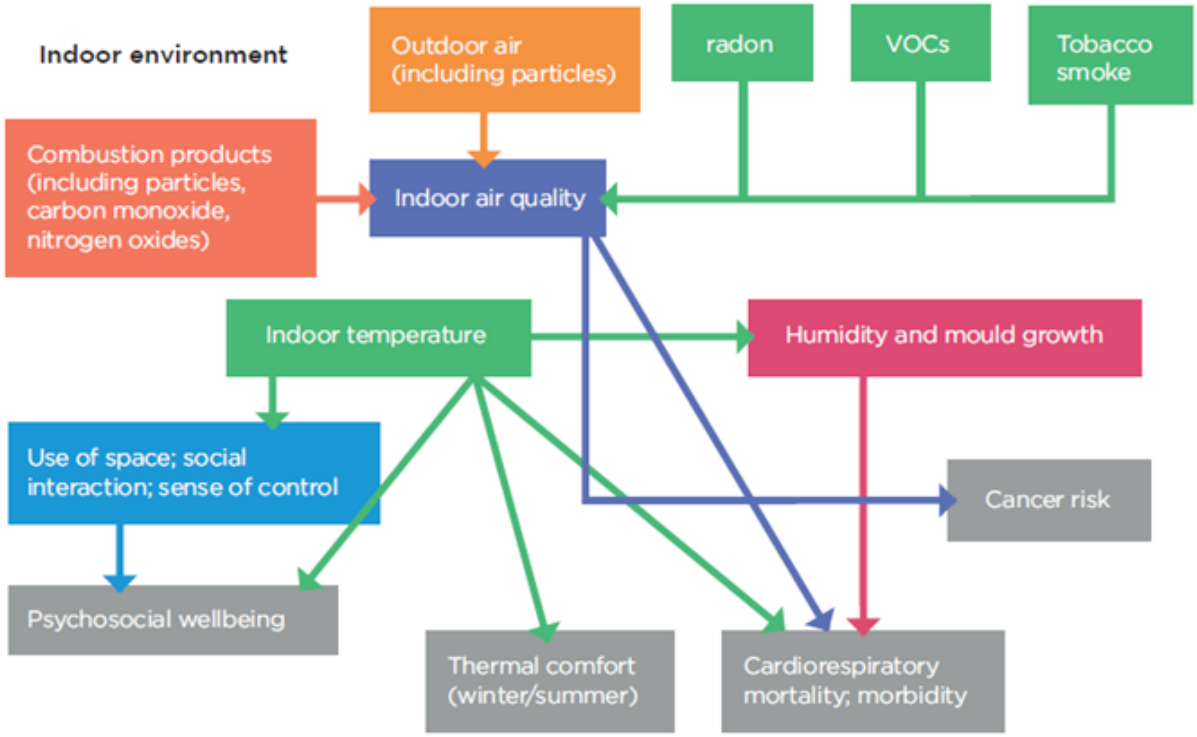


Table 7 - Housing and health

In BCWB in 2018,

- 12.4% of households (67,826) were living in fuel poverty, above the national average of 10.3%.
- The overall housing affordability ratio was 5.71, below the England average of 8.68. Given its relatively low income levels, this suggests that BCWB housing costs are even lower relatively, and this may have an impact on the quality of accommodation available.

In terms of housing security, the threat of eviction is associated with both physical and mental ill health, including depression, anxiety, psychological distress and suicides, and high blood pressure

and child maltreatment.[23] The sources of stress are related to worries about safety, paying rent, and lack of control.

In BCWB, and despite the reported affordability of housing, there has been an increasing gap between housing benefit levels and actual rents. This will mean that household spending on other items is constrained. This gap has been identified as a growing cause of homelessness nationally.[24]

The total number of evictions has remained broadly steady, though since 2014/15 there has been a reduction in evictions from social housing and an increase in accelerated evictions. There were 1,600 families evicted across Birmingham and the Black Country in 2017/18. Mortgage repossessions peaked at the time of the last economic crash (c.2,000 in 2008/09) and are now at a 15-year low (200 in 2017/18), with the risk that a new recession creates a new peak.

In 2017/18 the number of those recognised as statutorily homeless was 7.8 per 1,000 households in Birmingham (57% of which were BAME in the context of a 41% BAME population) and 2.6 per 1,000 in the Black Country (42% of which were BAME in the context of a 20% BAME population). BAME homeless increases exceeded population growth in the preceding ten years. Homelessness is linked to high Emergency Department use, with evidence of attendances being five to seven times the general level, and admissions four times as high.[25]

The proportion of households that are overcrowded was 9% in Birmingham, 7% in Sandwell, 6% in Wolverhampton, 5% in Walsall and 4% in Dudley (England, 5%).

Air quality and other environmental factors

Recent research by the Environment Agency[26] highlights that:

- *Air pollution is the single biggest environmental threat to health in the UK, shortening tens of thousands of lives each year.*
- *After air pollution, noise causes the second highest pollution-related burden of disease in Europe, and is responsible for more life years lost than lead, ozone or dioxins.*
- *There is emerging evidence of health effects from lower levels of pollution, although these are not currently well understood.*
- *Antimicrobial resistant microbes are becoming more common in the environment due to contamination, meaning infectious illnesses may become harder to treat.*

[23] https://www.sciencedirect.com/science/article/abs/pii/S0277953617300102
[24] https://www.barrowcadbury.org.uk/wp-content/uploads/2019/02/NPI-The-State-of-Economic-Justice-in-Birmingham-and-the-Black-Country_lo-res-for-web.pdf
[25] https://www.rcem.ac.uk/docs/Policy/Homelessness_and_EDs.pdf
[26] https://www.gov.uk/government/publications/state-of-the-environment/state-of-the-environment-health-people-and-the-environment

- *Mental health conditions are increasing - they are the largest single cause of disability in the UK, and can be caused or affected by pollution, flooding and climate change.*
- *Exposure to pollution, and access to the natural environment are not equally distributed across society - people living in deprived areas often have poorer quality environments with less accessible green space.*

There is an established relationship between air quality and health. Poor air quality recognised as the largest environmental risk to public health in the UK, with between 28,000 and 36,000 deaths a year attributed to long-term exposure.[27] It impacts healthy life expectancy through cardiovascular and respiratory illness, including stroke, lung cancer and asthma, as well as through low birth weight. Around 1,100 deaths annually in the Black Country and Birmingham may be attributable to particulate air pollution.

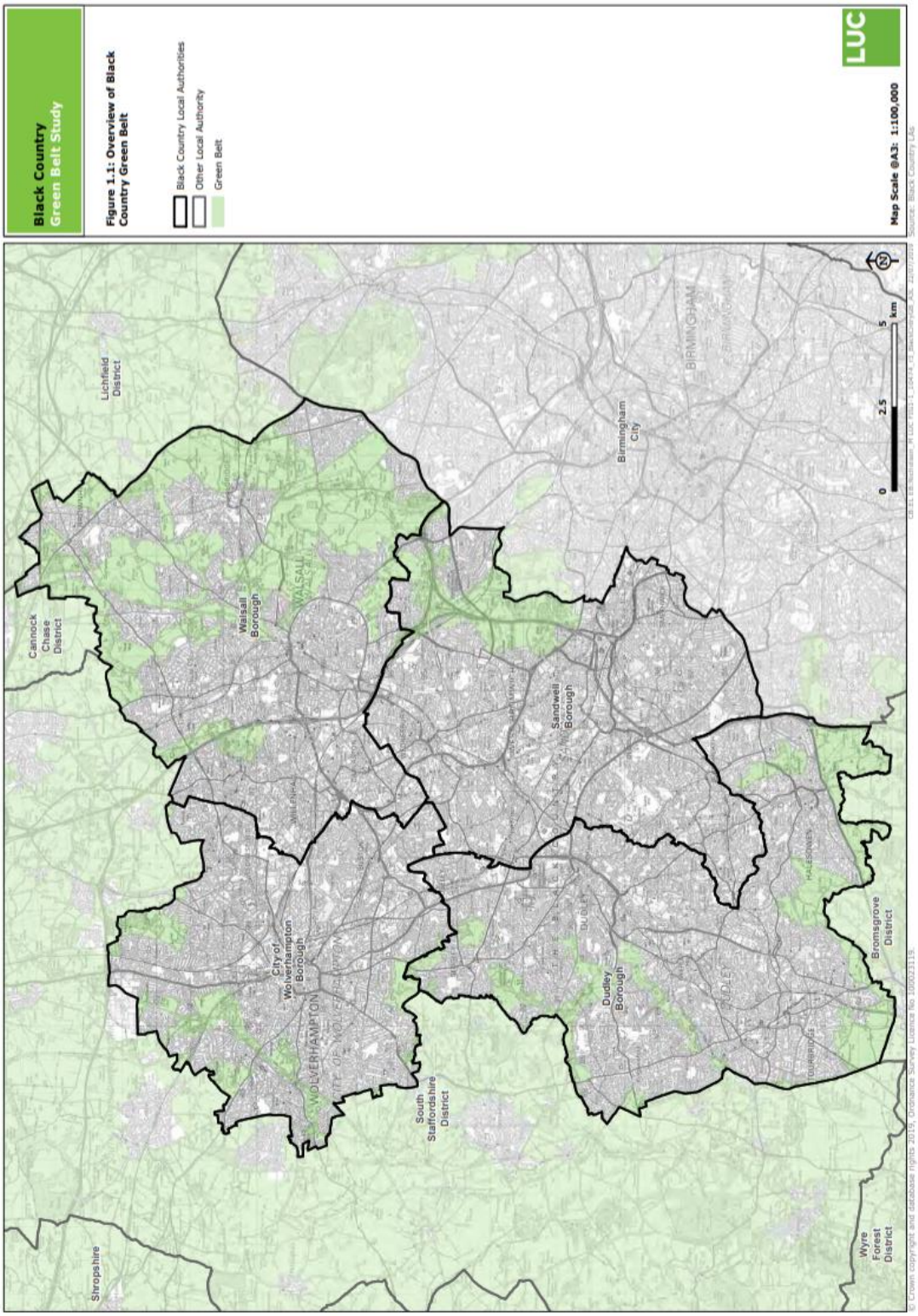
	England	West Midlands	Birmingham	Dudley	Sandwell	Walsall	Wolverhampton
Fraction of age 30+ mortality attributable to particulate air pollution	5.15	4.96	5.53	5.21	5.78	5.54	5.10
Estimate of number of deaths attributable to particulate air pollution	25,791	2,765	467	175	175	149	140
Air pollution: fine particulate matter	8.90	8.67	9.81	8.73	10.06	9.75	8.63

Table 8 - Air pollution and mortality in BCWB (PHE Fingertips data, 2018)

The major contributors to poor air quality are particulate matter (PM) and nitrogen dioxide (NO2). In BCWB, the air quality of 254 out of 804 LSOAs (32%) fell into the 'worst' category nationally. This is especially significant in Sandwell and West Birmingham. Nitrogen dioxide levels – around a quarter of which are associated with diesel vehicles (especially when moving slowly)[28] - are higher locally than across England (14.6 and 12.0, respectively). Access to Green Belt varies significantly across BCWB.[29] A report by the Royal College of Physicians found that, although air pollution is harmful to everyone, its adverse effects are especially felt by those who:

- live in deprived areas, which often have higher levels of air pollution
- live, learn or work near busy roads
- are more vulnerable because of their age or existing medical conditions.[30]

[27] https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution ;
[28] https://uk-air.defra.gov.uk/assets/documents/reports/aqeg/nd-summary.pdf
[29] https://blackcountryplan.dudley.gov.uk/media/13882/bcgb-0919-black-country-gb-stage-1-and-2-plus-app1-final-reduced_redacted.pdf
[30] https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution


Black Country
Green Belt Study
Figure 1.1: Overview of Black Country Green Belt
Black Country Local Authorities
Other Local Authority
Green Belt
LUC
Map Scale @A3: 1:100,000
Lichfield District
Cannock Chase District
Walsall Borough
Birmingham City
Sandwell Borough
City of Wolverhampton Borough
Dudley Borough
Bromsgrove District
South Staffordshire District
Wyre Forest District
Shropshire
0
2.5
5
km

The Additional Impacts of COVID-19

There is evidence that COVID-19 is affecting the wider determinants of health and the consequent demand for services in an adverse manner and to a significant degree. This is in addition to the direct treatment and enduring health impacts of the disease.

Health and care services face very significant demand and supply challenges because of COVID-19.

The first wave of the disease led to enormous efforts being made in frontline and supporting health and care services to ensure that the NHS remained able to care for those affected by the disease. This necessitated the deferral of a great deal of non-COVID activity that services are now in the process of recovering. In addition, a second wave appears to be building alongside typical winter pressures, and there is emerging evidence about the long-term health needs of those more seriously affected by COVID-19.

The direct impacts of the disease have created substantial morbidity and mortality challenges, and these appear to have had a particularly severe impact on older population groups, on those with underlying conditions and on Asian and Black communities.[31]

> *The prevalence and severity of the COVID-19 pandemic is magnified because of the pre-existing epidemics of chronic disease—which are themselves socially patterned and associated with the social determinants of health. Minority ethnic groups, people living in areas of higher socio-economic deprivation, those in poverty and other marginalised groups (such as homeless people, prisoners and street-based sex workers) generally have a greater number of coexisting non-communicable diseases, which are more severe and experienced at a younger age.*[32]

Its indirect impacts, operating through the socio-economic determinants of health, are also likely to have a materially adverse impact on population health and, consequentially, on the demand for healthcare services. There is no close precedent for the current pandemic but, in terms of the economic shock and employment effects, there are lessons to be learned from the global economic crisis that followed the 2008 financial crash, and a good deal of evidence has been emerging from research during the current pandemic.

> *Our analysis shows that a recession will lead to a large rise in the prevalence of chronic ill health. During the most intense part of the financial crisis of the late 2000s in the UK, there was around a 5% fall in the employment rate, a drop that was low by international standards. Assuming a (possibly conservative) fall in the employment rate in the coming year of the same size, our analysis predicts that the prevalence of chronic conditions in the working-age population will rise by somewhere between 7% and 10%. This increase*

[31] https://www.gov.uk/government/publications/COVID-19-understanding-the-impact-on-bame-communities
[32] https://jech.bmj.com/content/early/2020/06/13/jech-2020-214401

translates into around 900,000 more people of working age who will suffer from at least one chronic condition.[33]

Mental Health and COVID Case Study

My name is 'Donna' and I am a 22 year old carer who suffers daily with eczema, asthma, depression, anxiety, PTSD, possible MH, weakened immune system and under investigation for a heart condition and many more problems.

For as long as I can remember I have battled these conditions each day with very little understanding from those around me. Most of my conditions are triggered by my state of mentality for example my eczema is mainly affected when I am experiencing high stress levels, a PTSD attack or a change in hormones. (There are physical triggers too.) My flare ups can happen spontaneously and spread like a wildfire across all areas of my skin. Within minutes I can go from dry patches to emitting heat from large red patches of torn, weeping skin which in the past has been shredded down to muscle. It is not uncommon for my skin to flare to the point when I have to be bandaged completely and put onto rest as I am no longer able to bend my limbs due to how severe I have flared. As you can imagine this takes its toll on my mental health causing my depression to spike resulting in another flare up. It is an endless cycle with very little cures.

The scariest of my conditions is one that I do not have a formal diagnosis of as it first happened during lockdown and I have not been able to be submitted for a full investigation as of yet. My heart will jump from around 70 to over 180 plus in seconds, my chest grows tight, I then begin to hyperventilate, overheat, my body becomes numb, I lose coordination and strength, pain spreads throughout my body however I remain completely aware of everything happening without the ability to act upon it. This can happen at any given moment and as my doctor has warned me I could have a heart attack or potentially die if not treated immediately. As a young adult it feels like a death sentence and it has a massive impact on the quality of my life as I live in a perpetual state of fear which as you can guess is bad for my heart.

I have faced a lot of discrimination from health professionals, employers and people in general as they believe that because of these conditions I must be incapable when it is definitely not the case. I truly believe that with support groups and training a lot of people who are in the same boat as myself could make a difference and improve on the quality of life that we have.

Having poor health in this day and age with the Corona virus circulating people like myself who fall into a high risk category is terrifying, there is not a moment that I am not concerned for not only myself but for my disabled mother who I care for. If either of us contracted the virus there would be a much higher risk of death due to respiratory and cardiac complications.

As you can see the stress of the world and not knowing what is happening has had a massive impact on my day to day life making each moment excruciating, what makes it worse is not being able to access areas of help such as doctor surgeries and counselling due to the restrictions placed upon us so it is a battle I face alone for the time being.

[33] https://voxeu.org/article/impact-COVID-19-chronic-health-uk

The purpose of this section is to provide evidence of how COVID-19 is affecting, or might be expected to affect, some of the key socio-economic factors that determine the health and wellbeing of the BCWB population, and the additional demand for healthcare services that may be generated as a result. The Local Government Association (LGA) highlights that,

> *In the context of COVID-19 it is important to remember that it is often the effects of social determinants of health that have made people more vulnerable to the virus. Conversely the social effects of the virus on employment and the economy will have an additional impact on health.*[34]

The British Red Cross' COVID-19 Vulnerability index identifies 71% (124) of BCWB's middle layer super output areas (MSOAs) as being within the most vulnerable quintile nationally, and a further 21.5% (37) within the next most vulnerable quintile. The index combines multiple sources of data to identify

- Clinical vulnerability (underlying health conditions);
- Health & wellbeing including mental health (loneliness, healthy life expectancy at 65);
- Economic vulnerability (recipients of social care benefits, employment & support allowance, disability benefits, Universal Credit); and
- Social and geographical vulnerability (barriers to housing and services, poor living environment, digital exclusion).

Education and skills

A national survey organised by the Institute for Fiscal Studies and the Institute of Education, and completed online in April and May by over 4,000 parents of children aged 4–15, found that pupils (especially those from poorer families) lost out on learning opportunities and support as a result of the pandemic:

- Primary and secondary students spent c. 5 hours a day on average on home learning, with secondary pupils more likely to have online classes
- Only 47% of secondary pupils from the poorest fifth of families were offered active help from schools, such as online teaching, compared with 64% of the richest families.
- Poorer children spent 30% less time on home learning than those from higher-income families. Assuming no school attendance prior to September this creates an access differential equivalent to fifteen full school days.
- Parents in the richest families were c.15 percentage points more likely than those in the poorest fifth to report that the provision of online and other remote support, and 58% of primary pupils from the least well-off families did not have their own study space.

[34] https://www.local.gov.uk/sites/default/files/documents/22.52%20Social%20Determinants%20of%20Health_05_0.pdf

> *School closures are almost certain to increase educational inequalities. Pupils from better-off families are spending longer on home learning; they have access to more individualised resources such as private tutoring or chats with teachers; they have a better home set-up for distance learning; and their parents report feeling more able to support them. Policymakers should already be thinking about how to address the gaps in education that the crisis is widening.*[35]

A recent survey for the National Foundation for Educational Research (NFER)[36] found the gap between disadvantaged pupils and their peers increasing by 46%, with the impact felt particularly in schools with the highest level of free school meals and the lowest levels of attainment. A greater need for intensive catch-up support was identified for schools with the same characteristics, as well as those with a larger share of BAME pupils. Evidence from a linked survey[37] highlighted the difficulties for some pupils of accessing IT in the home, with double the proportion of pupils in the most deprived schools having little or no access to IT than those in the least deprived schools. Teachers in the West Midlands reported lower levels of pupil engagement than in London, and the region has also received a below average increase in resources through the National Funding Formula (3.6% compared with 3.2% in London, 3.8% in the North East, 5% in the South West and 5.03% in the East of England).

The educational impact of COVID clearly risks compounding existing disadvantage, including the preparedness of students for further study and skilled employment.

Employment and income

One of the most obvious impacts of the pandemic has been on job insecurity, including the novel experience of being furloughed, uncertainty about short- and long-term employment prospects and, increasingly, redundancies. These factors clearly also affect the ability to undertake or maintain house rental or purchase, as well as other core domestic expenditure.[38]

Analysis from the Institute for Fiscal Studies[39] applies learning from other recessions to the current pandemic, suggesting that those most likely to suffer the biggest economic losses are the more vulnerable in society and therefore less resilient to economic shocks (e.g. people with lower incomes are less likely to be able to work from home or have savings to dip into), and that groups of particular concern are families with young children or where mothers are pregnant, and low-income or low-socio-economic-status individuals of all ages where health vulnerabilities and mental health problems are already prevalent.

[35] https://www.ifs.org.uk/publications/14848
[36] https://www.nfer.ac.uk/schools-responses-to-COVID-19-the-challenges-facing-schools-and-pupils-in-september-2020/
[37] https://www.nfer.ac.uk/schools-responses-to-COVID-19-key-findings-from-the-wave-1-survey/
[38] https://www.sciencedirect.com/science/article/pii/S1743919120303162?via%3Dihub
[39] https://www.ifs.org.uk/publications/14799

A briefing from the Resolution Foundation[40] highlights the disproportionate impact in certain sectors of the workforce, reporting that those employed in shutdown sectors are over six times more likely to be in the lowest income decile than those working from home, and that under 25s are twice as likely to work in shutdown sectors than the rest of the workforce, with only 22% likely to be working from home (39% of 35- to 44-year-olds).

There is also evidence of the impact of recessions on children's health and their whole-life outcomes. Being born in a recession can reduce lifespan by c.5%; the recession-related stress experienced by pregnant mothers can lead to reduced birthweight and associated risks; and, during recessions, children's mental health outcomes can deteriorate and the use of special education services for emotional problems can increase.[41]

Economic output in the twenty most vulnerable places identified by the Centre for Progressive Policy (CPP)[42] is projected to be, on average, 18% lower after five years than the level expected pre-crisis. These are the places at particular risk of a prolonged economic downturn, and they include the five BCWB Local Authorities. The CPP further projects that average earnings in these vulnerable places will fall from £18,600 per annum to £17,300 in real terms over three years, and that parts of the Midlands face the largest initial impacts from COVID-19 and the associated economic shutdowns. Local businesses are part of internationally significant supply chains in key sectors such as advanced manufacturing, construction, and logistics. COVID-19 has forced a re-set across local businesses, as it has across Local Authorities, the NHS, and educational and other local institutions.

There were 82,040 BCWB unemployment claimants aged 16 years and over in May 2020, nearly double the figure in May 2019 (42,015). This accounts for 7.6% of the population aged 16 years and over (9.5% males, 5.8% females) and is above the national average of 5.0%. For claimants aged 16-24 years old, the BCWB figure was 10.8% compared with 7.2% nationally. Across all age BCWB groups, males have a higher number of claimants as a percentage of population (6.2%) in May 2020 compared to females (3.9%).

There are several elements of the present context that make it different from previous recessions, however. First, there have been the very significant mitigations put in place by the Treasury, including the Coronavirus Jobs Retention Scheme (resulting in a fall in average hours worked rather than in employment) and the Self-Employment Income Support Scheme (allowing the self-employed to remain in business). The OBR notes that these and other early interventions initially created

> *a contrast with the unemployment-heavy recessions of the early 1980s and early 1990s, and the more even split between unemployment, average hours and productivity that was seen during the recession that followed the financial crisis. As the support schemes come to an end, however, a more normal pattern is likely to reassert itself.*[43]

[40] https://www.resolutionfoundation.org/publications/risky-business/
[41] https://www.coronavirusandtheeconomy.com/question/how-will-lockdown-and-recession-affect-childrens-health
[42] https://www.progressive-policy.net/publications/back-from-the-brink
[43] https://obr.uk/fsr/fiscal-sustainability-report-july-2020/

In that next phase of the crisis, secondly, it is suggested that, despite the enormous initial impact on national income (GDP), the greater sustained impact will be on jobs, and on a similar scale to the 1980s (c.12% peak nationally) rather than post-2008 (c.8% peak nationally). One expert commentator has observed that

> *Even before the crisis, corporate profitability was down 20% on levels in the first half of 2017 and at similar levels to those at the height of the 2008/09 recession. The UK had narrowly missed recession at the end of 2019, before COVID-19 struck. Now, forecasts predict that GDP is 8-10% below peak as we emerge from Lockdown in July and 4% down in the first half of next year. The absence of, or very limited, trading for some months will have pushed many firms to the edge of existence……. With no financial buffers, firms will cut jobs heavily to protect the firm until clarity emerges of their trading position after September. The risk for the firm is that holding onto too many workers will push them into to bankruptcy, so firms will err on the side of laying off workers.*

Further, the sectors who have and will continue to be hardest hit by Lockdown and social distancing will be the labour intensive sectors of retail, hospitality, leisure and tourism.[44]

Linked to this, thirdly, the Resolution Foundation has argued that the defining feature of the evolving economic crises will be its sector specific impact.[45] To determine which BCWB sectors are most vulnerable to COVID-related impacts, broad sector analysis from OBR scenarios[46] has been applied to the ten main sectors. The table below highlights in red the sectors likely to be affected the most nationally, and their local 2018 scale in terms of jobs, GVA and businesses. This headline analysis suggests that the public sector (including education) and the visitor economy sector will be the sectors most impacted. The former, whilst of a similar scale locally as nationally, is relatively less productive (GVA relative to jobs); the latter is larger locally than nationally, and relatively more productive. Health may be the only sector that will be unscathed but, notably, also one of the sectors whose workforce has felt the impact of the pandemic most directly. It represents a similar proportion of the economy locally and nationally but appears to be much more productive locally.

These observations broadly align with recent analysis from City Region Economic and Development Institute (City REDI) which, although it uses a slightly different sectoral categorisation to the table below, finds that the sectors in the West Midlands most at risk of significantly reducing in size and most at risk of not bringing workers back post-furlough are advanced manufacturing and engineering, construction, retail and the cultural economy (comprising the visitor economy and sports).[47]

Although not in the highest risk sectors, the BCWB business services sector is relatively smaller and less productive than nationally, and the local retail sector represents a larger share of BCWB jobs than it does nationally. The COVID impact on retail is, of course, very mixed, appearing to increase

[44] https://blogs.ucl.ac.uk/cepeo/2020/06/17/unemployment-the-coming-storm/
[45] https://www.resolutionfoundation.org/publications/risky-business/
[46] https://cdn.obr.uk/OBR_FSR_July_2020.pdf
[47] https://blog.bham.ac.uk/cityredi/west-midlands-weekly-economic-impact-monitor-11th-september-2020/

the existing challenges for the high street but creating significant new opportunities linked to online retail, especially for groceries. How this internal sectoral change plays out is likely to be material to BCWB economic recovery. The ONS reported in September 2020 that while total sales (particularly for food and non-store retailing) had recovered, clothing sales were still 25.7% lower than in February 2020. Although footfall had increased between March and end August, it was still only c.70% or earlier levels in the high street and shopping centres and c.90% in retail parks.[48]

	Proportion of 2018 Jobs		Proportion of 2018 GVA		Proportion of 2019 Enterprises	
	BCWB	*England*	***BCWB***	*England*	***BCWB***	*England*
Advanced Manufacturing	**13.7%**	10.4%	**14.5%**	11.7%	**10.2%**	12.8%
Building Technologies	**4.5%**	4.6%	**6.0%**	6.1%	**11.9%**	12.7%
Business Services	**24.0%**	25.4%	**31.1%**	42.1%	**34.3%**	40.1%
Environmental Technologies	**1.2%**	1.1%	**2.5%**	2.5%	**0.4%**	0.5%
Health	**12.7%**	12.9%	**10.6%**	7.4%	**4.6%**	3.9%
Public Sector	**14.2%**	15.3%	**14.4%**	10.8%	**2.4%**	3.6%
Retail	**17.2%**	15.3%	**12.4%**	10.7%	**21.2%**	14.3%
Sports	**1.6%**	1.8%	**1.2%**	1.1%	**0.7%**	1.3%
Transport Technologies	**6.1%**	4.9%	**4.7%**	4.2%	**8.1%**	4.2%
Visitor Economy	**4.9%**	8.1%	**2.5%**	3.3%	**6.2%**	6.8%
Key:	most vulnerable sectors					least vulnerable sectors

Table 9 - Jobs, GVA and enterprises by sector

All sectors remain vulnerable to the scale of the post-COVID recession and, whatever, the scale of the risk, it will play on existing structural features including:

- The relatively low average income levels across BCWB (and the constrained ability to weather an economic crisis that accompanies this).
- The high numbers of children living in poverty (17.7% live in workless households and 28% in relative low income families).
- The already high rates of unemployment especially amongst
    - Mixed ethnic groups (19.3% BCWB compared to 6.2% nationally) and the Pakistani/Bangladeshi population (12.9% BCWB compared to 8.9% nationally) and
    - 16-24 year-olds (males 15.6% compared to England 13.7%; females 13.0% compared to England 9.6%);

48 https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronavirusCOVID19roundupeconomybusinessandjobs/2020-07-02

- The relatively low skills levels, especially in the White population;
- The relatively large proportion of 0-15 year-olds (21.5% BCWB, compared to 19.2% nationally) especially males - an age-group that will be seeking to enter the jobs market for the first time in the economic and social shadow of the COVID-19 pandemic; and
- The relatively high proportion of the population that is economically inactive (i.e. neither in work nor seeking work), especially females aged 16-49 and across all ethnic groups except those of Indian ethnicity; and
- The high levels of air pollution, with 32% of neighbourhoods (LSOAs) in the 'worst' category nationally.

These vulnerabilities clearly matter a great deal for the financial position of BCWB households, but they also have the potential to significantly affect BCWB population health. Janke et al (2020)[49] observe that, in England,

> *the treatment and care of people with chronic diseases accounts for an estimated 70% of total health and social care expenditure (Department of Health 2010). Around one in three of the population currently have at least one long-term health condition…….. Our analysis shows that a recession will lead to a large rise in the prevalence of chronic ill health. During the most intense part of the financial crisis of the late 2000s in the UK, there was around a 5% fall in the employment rate, a drop that was low by international standards. Assuming a (possibly conservative) fall in the employment rate in the coming year of the same size, our analysis predicts that the prevalence of chronic conditions in the working-age population will rise by somewhere between 7% and 10%. This increase translates into around 900,000 more people of working age who will suffer from at least one chronic condition.*

This evidence forms the basis of the modelling in the following section, along with analysis linking economic recession to an increase in suicide rates. That analysis[50] suggests there may have been c.8,000 excess suicides between 2007-10, and that rates remain high through economic recovering because of the perceived continuing risks around unemployment, unaffordable housing and indebtedness. The impacts of recession reduce in response to strong welfare and other support systems (such as active labour market programmes, unemployment payments and strong social capital[51]) but the unemployed have twice the risk of psychological problems and a higher mortality risk, irrespective of social groups.[52]

[49] https://voxeu.org/article/impact-COVID-19-chronic-health-uk
[50] http://eprints.lse.ac.uk/85919/1/Austerity%20and%20health_FINAL.pdf
[51] *Ibid.*
[52] https://www.sciencedirect.com/science/article/abs/pii/S0140673613601026

Housing

An impact on housing and homelessness is likely to follow because of changes in employment status and income. As with employment, mitigatory Government measures have sought to support houseowners and tenants to remain in their accommodation through the initial phases of the pandemic. Equally, as these measures are lifted and unemployment increases, the numbers of people experiencing housing insecurity and homelessness are likely to increase. As noted above, housing insecurity can lead to increased mental health needs, and poorer housing conditions can lead to poorer physical and mental health.

Recent research in Birmingham[53] suggests that housing quality (and air quality) are potential modulators of pneumonia presentation, and that there is a link between household overcrowding deprivation and admission to intensive care units for pneumonia patients. Patents of BAME ethnicity are more likely to be admitted from regions of highest air pollution, housing quality and household overcrowding deprivation.

The considerable numbers of employees who have been working from home and who may, to a large degree, continue to do so, also adds a pressure to the domestic environment, and may adversely affect the employment of those who residences do not easily accommodate working life, potentially by multiple occupiers. Nationally, there have been reports of increases in domestic abuse and child abuse especially during the lockdown period, with one domestic abuse helpline reporting a 25% increase in calls.[54]

Air quality and other environmental factors

Levels of nitrogen dioxide and small particle pollution are significantly lower than the levels normally seen at this time of year in most of the UK's largest cities, and emissions of carbon dioxide are expected to fall by an unprecedented 5%.[55] Despite this, the effect on population health may not be great or long-lasting, although enduring changes to travel patterns could bring material benefits. For those with existing respiratory illness, of course, COVID-19 and its after-effects are likely to have increased morbidity and mortality. Over a third of COVID-19 deaths in England before July had respiratory or cardiovascular disease as the main pre-existing health condition.[56]

The burden of coronavirus has been exacerbated and amplified by wider, deep-seated social, economic and health concerns. The right response is therefore not to duck or defer action on

[53] https://www.researchsquare.com/article/rs-35617/v1
[54] https://www.scie.org.uk/care-providers/coronavirus-COVID-19/safeguarding/domestic-violence-abuse
[55] https://warwick.ac.uk/newsandevents/knowledgecentre/science/life-sciences/air_quality_and_lockdown
[56] https://www.ons.gov.uk/economy/environmentalaccounts/articles/doesexposuretoairpollutionincreasetheriskofdyingfromthecoronavirusCOVID19/2020-08-13

these longer-term challenges even as we continue to respond to immediate pressures. It is to confront them head on.[57]

Poor air quality, especially air-borne particulates, may also have facilitated the transmission of the disease. Air pollution and housing quality deprivation are potential modulators of presentation with multi-lobar pneumonia, and household overcrowding deprivation and presentation with multi-lobar pneumonia are potential modulators of ITU admission. Patients of BAME ethnicity are more likely to be admitted in the regions with the highest air pollution, poor housing quality and household overcrowding deprivation, and this is likely to contribute an explanation towards the higher ITU admissions reported among COVID-19 BAME patients.

There is uncertainty as to when commuting levels will return, if ever, return to pre-COVID levels, due to the increase in home-working, but the air quality benefits of this will have been partially offset by increases in online retail activity and the associated delivery mechanisms. As people do return to workplaces, it may be that a higher proportion than before opt for private rather than public transport, to reduce potential exposure to COVID-19 or other diseases.

It is also the case, however, that our necessary response to the pandemic will have generated adverse environmental effects, *including increased need for personal protective equipment (PPE), cleaning products, ventilators and other associated equipment, single-use plastics and changes to patterns of prescribing and clinical interventions*.[58]

[57] https://www.england.nhs.uk/greenernhs/publication/delivering-a-net-zero-national-health-service/
[58] https://www.england.nhs.uk/greenernhs/publication/delivering-a-net-zero-national-health-service/

The Modelled Effects of a COVID Recession on Healthcare Demand

The purpose of this section, and the modelling by The Strategy Unit that underlies it, is to illustrate the effect that a COVID-related economic recession could have on the demand for healthcare services. The full methodology is set out in Appendix Two – Methodology for Prospective Modelling of Economic Scenarios.

Methodology summary

Research undertaken for the Institute of Fiscal Studies (IFS) into the health effects of the 2008 recession that followed the global financial crash found a correlation between employment rates and prevalence rates for cardiovascular disease (CVD), musculoskeletal conditions (MSK), respiratory disease, mental health conditions and other conditions.

> *We find strong and robust counter-cyclical relationships for overall chronic health…. Chronic health conditions therefore increase in poor economic times…… The estimated effects are largest in areas with a more traditional industrial composition, older populations and populations with poorer long-term health……*[59]

The analysis was based on self-reported data captured in the UK's Quarterly Labour Force Survey that asks respondents about their chronic health conditions. For each condition, the research identified the relationship between employment and health, and how this played out over time following the initial economic shock in terms of the change in healthcare conditions associated with a percentage change in employment.

To model the effects of the emerging COVID-related recession on these same conditions, a reasonable set of assumptions about unemployment levels in BCWB over the coming 5 years needed to be established, assuming that the health impact of unemployment rate changes broadly mirror the impacts of employment rate changes. Given the extremely high levels of uncertainty around the course of the pandemic and the timing, scale and duration of its economic impacts, those assumptions were derived from the three scenarios presented in the Office for Budget Responsibility's (OBR) *Fiscal Sustainability Report, July* 2020.[60] The 2019 unemployment rate in BCWB was 2.9% higher than the national rate and, as has been noted above, its sectoral structure is particularly vulnerable to the adverse effects of a COVID-related recession. The projected annual unemployment rates in each OBR scenario have therefore been uplifted by the 2019 differential. This is a conservative adjustment given that the differential might be expected to widen but, in consultation with the Black Country Consortium, it was judged to produce a plausible range of rates. Peak Black Country unemployment after the 2008 crash

[59] https://www.ifs.org.uk/publications/14807#:~:text=local%20area%20heterogeneity-,Macroeconomic%20conditions%20and%20health%20in%20Britain%3A%20aggregation,dynamics%20and%20local%20area%20heterogeneity&text=We%20estimate%20a%20model%20that,selection%20of%20optimal%20local%20area.
[60] https://obr.uk/fsr/fiscal-sustainability-report-july-2020/

(2010) was 13.1%, comparable to our central scenario here.[61] Those same years saw the largest increases in hospital admissions nationally for the whole of the 2008-2018 period (5.2% and 7.8%, respectively),[62] although these increases would have resulted from a number of causes beyond recession-related chronic ill health (e.g. demographic change, service capacity, changes in care models and protocols).

	2020	2021	2022	2023	2024
Upside scenario	10.8%	8.5%	6.9%	6.9%	7.0%
Central scenario	11.7%	13.0%	9.8%	8.8%	8.2%
Downside scenario	12.0%	14.5%	11.0%	9.8%	9.2%

Table 10 - BCWB unemployment rate assumptions by OBR scenario

The combined effect of these unemployment rate assumptions and the evidenced relationship between employment and health was then applied to the 2019 acute healthcare activity for BCWB residents relating to the identified conditions. The analysis was limited to the working age population (15-64 years), since this group is exposed to the direct impact of unemployment, and to NHS provider Trusts in the Black Country and Birmingham (inflows and outflows of activity are ignored, and it is assumed that services continue to be provided in the same way as in 2019, and by the same organisation). Mental health activity data is reported separately from physical health activity data due to the different activity categorisations involved, and primary and community care data is excluded since the former is not available and the latter cannot be identified by healthcare condition. The mental health data also includes two Birmingham-based provider Trusts because of the scale of services they provide to BCWB patients (and not just within West Birmingham).

To illustrate the potential impact of COVID-related unemployment in isolation, no other expected or potential changes in demography or prevalence have been assumed, including the direct and indirect healthcare activity impacts of the COVID-19 disease itself.

Summary of results

As has been noted above, the results of this modelling may usefully inform both supply-side and demand-side responses to emerging (and deteriorating) population health need. This report focuses exclusively on the latter, as it seeks to inspire further discussion and action around the socio-economic determinants of health.

Across the scenarios, the activity impact of COVID-related unemployment on physical health conditions peaks in 2020-21 with an overall increase of between 6% and 16% on the 2019 baseline (Figure 10). The scale and profile of the impact varies a little by condition, but the shape of the curves is largely determined by the assumed unemployment rate. Activity remains above baseline for the whole period but annual increases peak after 2021 for CVD (Figure 11), MSK (Figure 12) and respiratory (Figure 13).

[61] https://www.nomisweb.co.uk/reports/lmp/lep/1925185537/subreports/ea_time_series/report.aspx?
[62] https://www.england.nhs.uk/statistics/statistical-work-areas/hospital-activity/quarterly-hospital-activity/qar-data/

Overall volumes for physical healthcare activity in all scenarios are summarised in Table 11, with breakdown by activity type.

Table 11 - Total physical healthcare activity by scenario

	UPSIDE					CENTRAL					DOWNSIDE				
Activity Type	2019 baseline	2020	2021	2022	2023	2024	2019 baseline	2020	2021	2022	2023	2024	2019 baseline	2020	2021	2022	2023	2024
A&E attendance	26,017	27,746	27,242	26,345	26,090	26,072	26,017	28,126	29,365	28,156	27,322	26,835	26,017	28,252	30,083	28,891	27,921	27,357
IP-Elective	16,963	18,099	17,833	17,248	17,055	17,025	16,963	18,349	19,243	18,452	17,894	17,546	16,963	18,432	19,720	19,033	18,401	18,020
IP-Emergency	12,166	12,965	12,732	12,318	12,201	12,193	12,166	13,140	13,712	13,149	12,765	12,541	12,166	13,198	14,044	13,494	13,044	12,777
OP	109,215	116,532	114,802	111,036	109,798	109,608	109,215	118,139	123,880	118,786	115,195	112,962	109,215	118,674	126,948	122,506	118,437	115,986
Grand Total	**164,361**	**175,343**	**172,609**	**166,947**	**165,144**	**164,899**	**164,361**	**177,753**	**186,201**	**178,542**	**173,176**	**169,883**	**164,361**	**178,557**	**190,794**	**183,924**	**177,803**	**174,140**
		6.7%	**5.0%**	**1.6%**	**0.5%**	**0.3%**		**8.1%**	**13.3%**	**8.6%**	**5.4%**	**3.4%**		**8.6%**	**16.1%**	**11.9%**	**8.2%**	**5.9%**

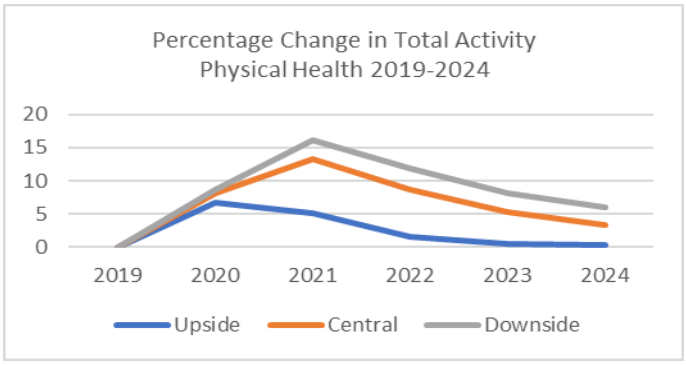


Figure 10 - Change in levels of physical healthcare activity, by scenario

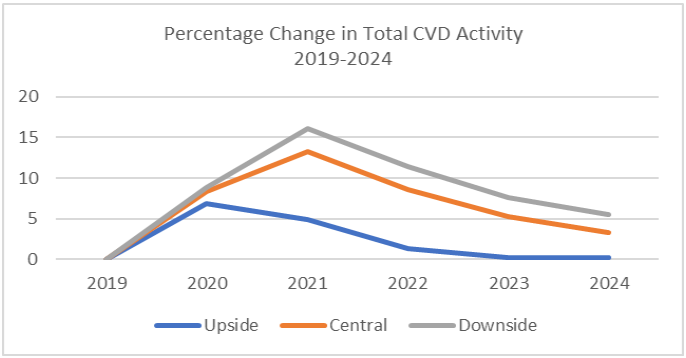


Figure 11 - Change in levels of CVD activity, by scenario

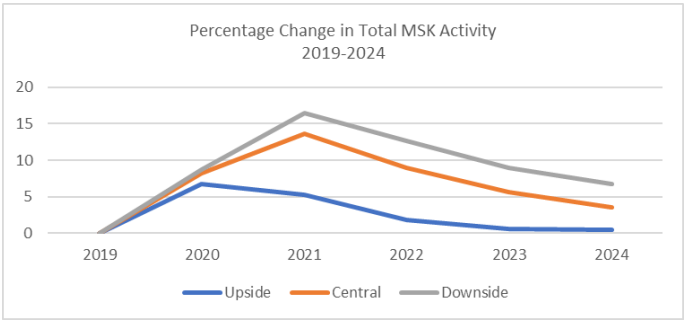


Figure 12 - Change in levels of MSK activity, by scenario

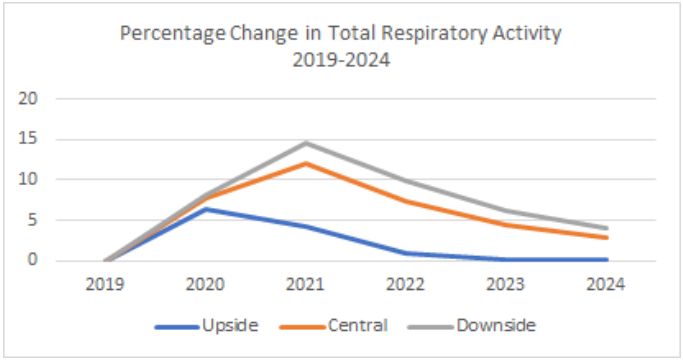


Figure 13 - Change in levels of respiratory activity, by scenario

In terms of equity of access to services for different population groups:

- Ethnicity data is missing in more than 12% of the data, roughly corresponding to apparent under-activity for White and Asian ethnic groups. It is not possible to know whether this under-activity in due to reporting issues with these groups (and, if so, why) or to issues with equity of access.

Ethnic Group	Activity		15-64 Population (2011 census)		
White	99,707	64.2%	596,138	69.9%	-5.7%
Asian/Asian British	19,492	12.5%	164,961	19.3%	-6.8%
Black/African/Caribbean/Black British	10,570	6.8%	55,109	6.5%	0.3%
Mixed/multiple ethnic	2,989	1.9%	23,895	2.8%	-0.9%
Other ethnic groups	3,042	2.0%	13,152	1.5%	0.4%
Not stated/null/blank	19,546	12.6%	0	0.0%	12.6%
Total	**155,346**	**100.0%**	**853,255**	**100.0%**	

Table 12 - Baseline physical healthcare activity by ethnic group

- There appears to be relatively low activity for Dudley patients (similarly but less so for West Birmingham patients) and relatively high activity for Wolverhampton patients. Again, it is not possible to know whether this reflects actual inequities in access or other factors (such as outflows to non-BCWB Trusts).

Place	Activity		Population (ONS mid-2019)		
Dudley	30,381	18.5%	200,787	22.7%	-4.2%
Sandwell	40,677	24.7%	211,450	23.9%	0.8%
Walsall	34,628	21.1%	179,547	20.3%	0.7%
West Birmingham	19,797	12.0%	123,066	13.9%	-1.9%
Wolverhampton	38,878	23.7%	168,518	19.1%	4.6%
Total	**164,361**	**100.0%**	**883,368**	**100.0%**	

Table 13 - Baseline physical healthcare activity by place

- Those in the two most deprived population deciles receive a proportionately higher volume of healthcare than those is less deprived deciles, but over half of the BCWB population falls into these most deprived deciles.

Deprivation Deciles	Activity		18-59/64 Population (ONS 2019)		Variance
Deciles 1-2	91,207	55.5%	455,623	52.3%	3.2%
Deciles 3-4	32,286	19.6%	171,317	19.7%	0.0%
Deciles 5-6	19,093	11.6%	112,083	12.9%	-1.3%
Deciles 7-8	12,834	7.8%	78,258	9.0%	-1.2%
Deciles 9-10	7,065	4.3%	53,646	6.2%	-1.9%
Null/blank	1,876	1.1%	0	0.0%	1.1%
Total	**164,361**	**100.0%**	**870,927**	**100.0%**	

Table 14 - Baseline physical healthcare activity by IMD decile

	UPSIDE						CENTRAL						DOWNSIDE					
Activity Type	2019 baseline	2020	2021	2022	2023	2024	2019 baseline	2020	2021	2022	2023	2024	2019 baseline	2020	2021	2022	2023	2024
Routine Referral	36,390	39,893	39,888	37,451	37,360	37,430	36,390	40,662	44,393	42,287	39,560	38,155	36,390	40,918	46,098	44,279	41,157	39,576
Urgent Referral	56,487	61,924	61,916	58,134	57,992	58,102	56,487	63,118	68,910	65,641	61,408	59,226	56,487	63,516	71,556	68,733	63,887	61,432
Stays	2,102	2,304	2,304	2,163	2,158	2,162	2,102	2,349	2,564	2,443	2,285	2,204	2,102	2,364	2,663	2,558	2,377	2,286
Contacts	294,761	323,135	323,093	303,357	302,617	303,189	294,761	329,363	359,588	342,528	320,438	309,055	294,761	331,439	373,395	358,662	333,375	320,566
Grand Total	**389,740**	**427,256**	**427,201**	**401,106**	**400,127**	**400,883**	**389,740**	**435,492**	**475,456**	**452,898**	**423,691**	**408,640**	**389,740**	**438,237**	**493,712**	**474,232**	**440,796**	**423,861**
		9.6%	**9.6%**	**2.9%**	**2.7%**	**2.9%**		**11.7%**	**22.0%**	**16.2%**	**8.7%**	**4.8%**		**12.4%**	**26.7%**	**21.7%**	**13.1%**	**8.8%**

Table 15 - Total mental healthcare activity by scenario

In line with the IFS research, the impact on mental health conditions of recession is greater than on physical health conditions. Whilst the peaks still occur in 2020-21, they range between 10% and 27% above 2019 baseline levels (Figure 14). Overall volumes for physical healthcare activity in all scenarios are summarised in Table 15, with breakdown by activity type.

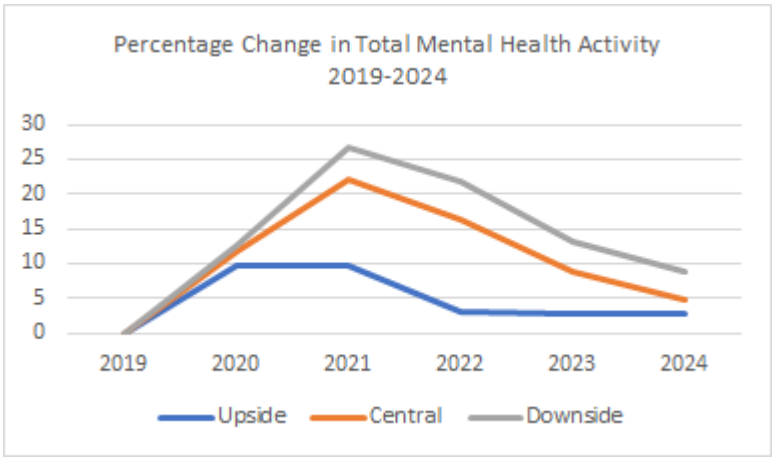


Figure 14 - Change in levels of mental healthcare activity, by scenario

In terms of equity of access to mental health services:

- Ethnicity data is missing in more than 9% of the data, with proportionately low levels of activity for White and Asian ethnic groups and high level for Black ethnic groups. It is not possible to know whether this under-activity in due to reporting issues with these groups (and, if so, why) or to issues with equitable access.

Ethnic Group	Activity		15-64 Population (2011 census)		
White	238,433	61.2%	596,138	69.9%	-8.7%
Asian/Asian British	56,680	14.5%	164,961	19.3%	-4.8%
Black/African/Black British/Caribbean	39,096	10.0%	55,109	6.5%	3.6%
Mixed/multiple ethnic	13,984	3.6%	23,895	2.8%	0.8%
Other ethnic group	5,070	1.3%	13,152	1.5%	-0.2%
Not stated/ null/blank	36,477	9.4%		0.0%	9.4%
Total	**389,740**	**100.0%**	**853,255**	**100.0%**	

Table 16 - Baseline mental healthcare activity by ethnic group

- There appears to be relatively low activity for Dudley patients (similarly but less so for Walsall patients) and relatively high activity for West Birmingham patients.

Again, it is not possible to know whether this reflects actual inequities in access or other factors (such as primary care effectiveness).

Place	Activity		Population (ONS mid-2019)		
Dudley	70,994	18.2%	200,787	22.7%	-4.5%
Sandwell	94,846	24.3%	211,450	23.9%	0.4%
Walsall	72,537	18.6%	179,547	20.3%	-1.7%
West Birmingham	74,854	19.2%	123,066	13.9%	5.3%
Wolverhampton	76,509	19.6%	168,518	19.1%	0.6%
Total	**389,740**	**100.0%**	**883,368**	**100.0%**	

Table 17 - Baseline mental healthcare activity by place

- Those in the two most deprived population deciles receive 62.5% of the activity and a proportionately higher volume than those is less deprived deciles. This differential is three times as great in mental healthcare as it is in physical healthcare.

IMD	Activity		15-59/64 Population (ONS mid-2019)		
Deciles 1-2	243,670	62.5%	455,623	52.3%	10.2%
Deciles 3-4	72,048	18.5%	171,317	19.7%	-1.2%
Deciles 5-6	36,477	9.4%	112,083	12.9%	-3.5%
Deciles 7-8	20,842	5.3%	78,258	9.0%	-3.6%
Deciles 9-10	11,949	3.1%	53,646	6.2%	-3.1%
Null/Blank	4,754	1.2%	0	0.0%	1.2%
Total	**389,740**	**100.0%**	**870,927**	**100.0%**	

Table 18 - Baseline mental healthcare activity by IMD decile

- Based on research by Stuckler et al,[63] an increase in unemployment of more than 3% would be expected to increase the number of suicides by 4.45%. Within the 0-64 age group in BCWB, this would equate to an increase from 105 to 109 suicides annually. In addition, suicide attempts are estimated to be 40 times more common than completed suicides (Borges et al[64]), suggesting that there could be as many as 160 more suicide attempts annually in BCWB, compared with 4,200 in 2019.

The above scenarios do not allow for the effects of further local or national lockdowns (though these would increase the probability of the downside scenario), nor do they make any assumptions about the effects of current or emerging government economic policy (for example, promised investment of adult education and in relation to the regeneration of high streets[65]) which, if successful, would increase the probability of the upside scenario.

It is also conceivable that the fiscal constraints associated with recession could lead to reductions in NHS and other public sector funding in the medium to long term. This would not affect the existence of

[63] https://academic.oup.com/eurpub/article/27/suppl_4/18/4430523
[64] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3000886/
[65] https://www.gov.uk/government/news/50-million-boost-to-support-the-recovery-of-our-high-streets; https://www.gov.uk/government/news/major-expansion-of-post-18-education-and-training-to-level-up-and-prepare-workers-for-post-covid-economy

additional healthcare demand that is associated with unemployment, although it could clearly affect the scale and/or scope of healthcare supply.

For member organisations of the BCWB Healthier Futures Partnership, two interactive modelling tools developed by The Strategy Unit are available via the Healthier Futures Academy that enable further analysis of the modelled data, including (where available) by disease group, activity type, place, ethnicity, deprivation decile, Trust, and Primary Care Network. These tools cover physical healthcare activity and mental healthcare activity, respectively. It should be noted that where there are underlying variances in treatment rates between different places and/or providers, these will simply be magnified in the projected scenarios. Further analysis and research would be required to understand the reasons for such baseline variances.

Increasing Collaborative Impact on the Wider Determinants of Health

The Dual Impact of the NHS

The NHS impacts population health status both directly through the care, treatment and medication it provides and indirectly through the way in which healthcare services are organised and healthcare resources invested.

A Strategy Unit analysis for BCWB in 2017[66] identified local spending of £2bn annually (2014/15 values), the majority of which (52%) was spent on employee benefits and the remainder on purchasing goods and services. The combined economic impact of this spending (including through multiplier effects) was estimated to be £1.5bn Gross Value Added (GVA), some 7.9% of the total sub-regional GVA. The NHS directly employed nearly 29,000 people in 24,200 full-time equivalent (FTE) jobs, not including agency staff used by the NHS. The bulk of these roles were support staff and nurses and midwives. A further 4,400 FTE jobs were directly funded as bank staff (those not permanently employed but who NHS organisations bring in to cover shifts without resorting to agency staff), and an additional 2,100 Agency jobs were supported but employed by non-NHS organisations. A total of 30,800 FTE jobs were directly supported by NHS spending on staff, representing 6.3% of the Black Country workforce. This excludes employment indirectly supported by the purchase of goods and services, and the spending of NHS staff wages. Allowing for this indirect impact, the NHS was responsible for 40,800 FTE jobs, 8.3% of the local workforce. The average annual gross wage (including value of pensions) for NHS staff in the Black Country was estimated to be £34,100, some 26% higher than the average weekly earnings locally.

The purpose of the 2017 analysis, like this present analysis, was to inform action to increase the local economic impact of the NHS. At that time, local stakeholders identified three illustrative schemes:

1. **Improving access to healthcare services for employed individuals.** Patients who are employed can find it difficult to attend healthcare appointments for themselves or for those they care for, as they typically occur during the working day. The NHS could offer services that are more convenient for employed individuals. This could be through changing forms of access (such as use of telephone or video conferencing for consultation) and /or moving services to more convenient locations. It was estimated that this could lead to an increase in economic output of £9m annually. It could also generate substantial cost savings to the NHS. The transformation of outpatient services subsequently became a focus of the NHS Long Term Plan, and significant progress has been made, of necessity, during the COVID-19 pandemic.
2. **Increasing support for employed individuals presenting common mental health problems.** Many individuals are estimated to have a mental health condition. These range from common conditions (e.g. stress and anxiety) to more complex needs. Many individuals with more

[66] http://www.strategyunitwm.nhs.uk/publications/economic-impact-nhs-spending-black-country-full-version

common mental health conditions are either in employment or would like to return to work. By using some of the resources available within the NHS and local partner organisations , support could be provided to these individuals to ensure they can remain in employment, reducing the amount of absence individuals require, and to help support others back into work. It was estimated that this could lead to an increase in economic output of over £8m annually through limited additional expenditure.

3. **Providing support for informal carers.** The value of informal care provided in the Black Country was estimated to be over £2bn, some of which would be provided at the expense of other economic activity. Some individuals who are employed but have caring responsibilities will require time away from work to provide care and may fall out of the labour market altogether, although they do have entitlements under the Care Act 2014. Other individuals who are not in employment would like to return to work if their caring responsibilities were reduced. The NHS could use some resources to provide support to carers, to help them cope with providing care and remaining in employment. It was estimated that this could lead to increase in economic output of £8m annually through limited additional expenditure.

The combined potential impact of these illustrative schemes was £29m GVA annually, comparable to the national Growth Deal programme of government grant funding for local economies (£23m) during the same period.

> *Improving health for communities can only be done if the social determinants of health are tackled, in addition to the provision of good quality care and work to ensure behaviour change. There is little use in simply treating people for a health condition if the cause of that condition is not also addressed.*[67]

The NHS Long Term Plan has since highlighted the potential for NHS organisations to realise more fully their role as 'anchor institutions'[68] in local communities. The plan commits the NHS to working with sites across the country to identify good practice that can support wider social goals including:

- Ensuring people can maintain employment through fast, convenient access to services, including through new channels (e.g. digital appointments);
- Helping people with mental health problems to find and retain employment;
- Increasing investment in services for people experiencing a mental health crisis to help ease pressures on police services and for the most vulnerable children and young people in, or at risk of being in, contact with the youth justice system;
- Targeting early help for adults living in households with vulnerable children, and improving access to targeted support for these children, especially during transition to adult services, building on the current assessment pilots for children entering the care system;

[67] https://www.local.gov.uk/sites/default/files/documents/22.52%20Social%20Determinants%20of%20Health_05_0.pdf
[68] https://www.health.org.uk/news-and-comment/charts-and-infographics/the-nhs-as-an-anchor-institution

- Reducing the environmental impact of NHS service provision – including waste, emissions and medicines.[69]

This commitment is echoed in the NHS Confederation's reset programme that includes a focus on the NHS's role in economic and social recovery, the focus of this local programme:

> *The COVID-19 health emergency is anticipated to leave a social and economic downturn in its wake. Health services have a vital role to play in the wider recovery and rebuilding of local economies and communities – driving up prosperity, population health and wellbeing.*[70]

The Opportunities for 'Anchor Institutions'

There are opportunities for the NHS, with local partners, to increase its impact as an anchor institution on the determinants of health, bringing greater benefits to local communities and limiting the adverse impacts of COVID-19.

The NHS can sometimes struggle to find the best way to engage with Local Government and its priorities, and similarly with the realities of the voluntary and community sector. Given that the NHS is a significant economic actor in local communities, this is likely to mean that opportunities to collaborate on increasing economic value (as well as population health and wellbeing) are being missed. The effects of this are more likely to be felt in areas of greater deprivation, such as BCWB, where public sector spending often represents a larger proportion of the local economy. The local NHS is a very significant employer and purchaser, and there are opportunities to exploit this reality more effectively for local benefit.

A potential common frame of reference for local partners is provided by the Marmot review – *Fair Society, Healthy Lives*[71] which observes that:

> *People with higher socioeconomic position in society have a greater array of life chances and more opportunities to lead a flourishing life. They also have better health. The two are linked: the more favoured people are, socially and economically, the better their health. This link between social conditions and health is not a footnote to the 'real' concerns with health – health care and unhealthy behaviours – it should become the main focus. Consider one measure of social position: education. People with university degrees have better health and longer lives than those without. For people aged 30 and above, if everyone without a degree had their death rate reduced to that of people with degrees, there would be 202,000 fewer premature deaths each year. Surely this is a goal worth striving for.*

[69] https://www.longtermplan.nhs.uk/online-version/appendix/the-nhs-as-an-anchor-institution/
[70] https://www.nhsconfed.org/supporting-members/nhs-reset/themes/social-and-economic-recovery
[71] http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review

The review identified six priority themes, although the last is omitted in the 2020 update.[72] The remaining five themes are listed below, supported by a brief summary of Local Authority priorities across BCWB that relate to those themes:

1. Give every child the best start in life

   LA priorities range from an overarching focus on supporting a 'best start in life', through addressing wider determinants (e.g. permanent housing and household income) to improving access to services (including specialist perinatal mental health support) and health outcomes (childhood obesity, breastfeeding rates and maternal and newborn health).

2. Enable all children, young people and adults to maximise their capabilities and have control over their lives

   LA priorities include an emphasis on detecting and preventing adverse childhood experiences and increasing the capacity of children and young people to protect and safeguard themselves. There is also a common focus on enhancing emotional and mental health and wellbeing, supported by strong attachment and healthy relationship styles. Educationally, priorities include improving school readiness and outcomes, and supporting educational setting to help children and young people make healthy choices, improve health outcomes and prepare for work.

3. Create fair employment and good work for all

   LA plans not only seek to develop, attract and retain high quality staff but also to improve access to skills, training and support so that more local people are able to secure rewarding, higher quality/added value jobs, not least those with mental health conditions. There is also a focus on improving both physical and mental health and wellbeing in and through the workplace.

4. Ensure healthy standard of living for all

   LA priorities cover two main areas under this theme – improving services and improving the experience of living in local communities. In terms of services, there are priorities around joining up services (especially for frailty and end of life) and reducing unwarranted variation; increasing individual control over care; providing better support for those with mental health conditions; improving accommodation for people with learning disabilities; and improving the wellbeing of those with multiple complex needs. In terms of wider factors, priorities address the provision of affordable and appropriate housing; healthy environments with greater choice in food outlets, better air quality and that support more active lifestyles; safer communities in which offenders can rehabilitate and people are protected from extremism; and less isolated communities where, enabled by health champions, appropriate meeting places and increased volunteering, loneliness is reduced.

[72] https://www.health.org.uk/sites/default/files/2020-03/Health%20Equity%20in%20England_The%20Marmot%20Review%2010%20Years%20On_executive%20summary_web.pdf

5. Create and develop healthy and sustainable places and communities

LA priorities focus on:

- Reducing obesity, especially amongst children, through improving health literacy, helping more people to be more active more often, supporting healthy choices and increasing access to healthy, affordable food.
- Increasing emotional wellbeing and resilience and adopting a zero-suicide ambition.
- Preventing the violence and exploitation that is linked to poor mental health, physical health or substance misuse.

So how do we make better use of NHS-invested resources to support the Marmot priorities across our local communities?

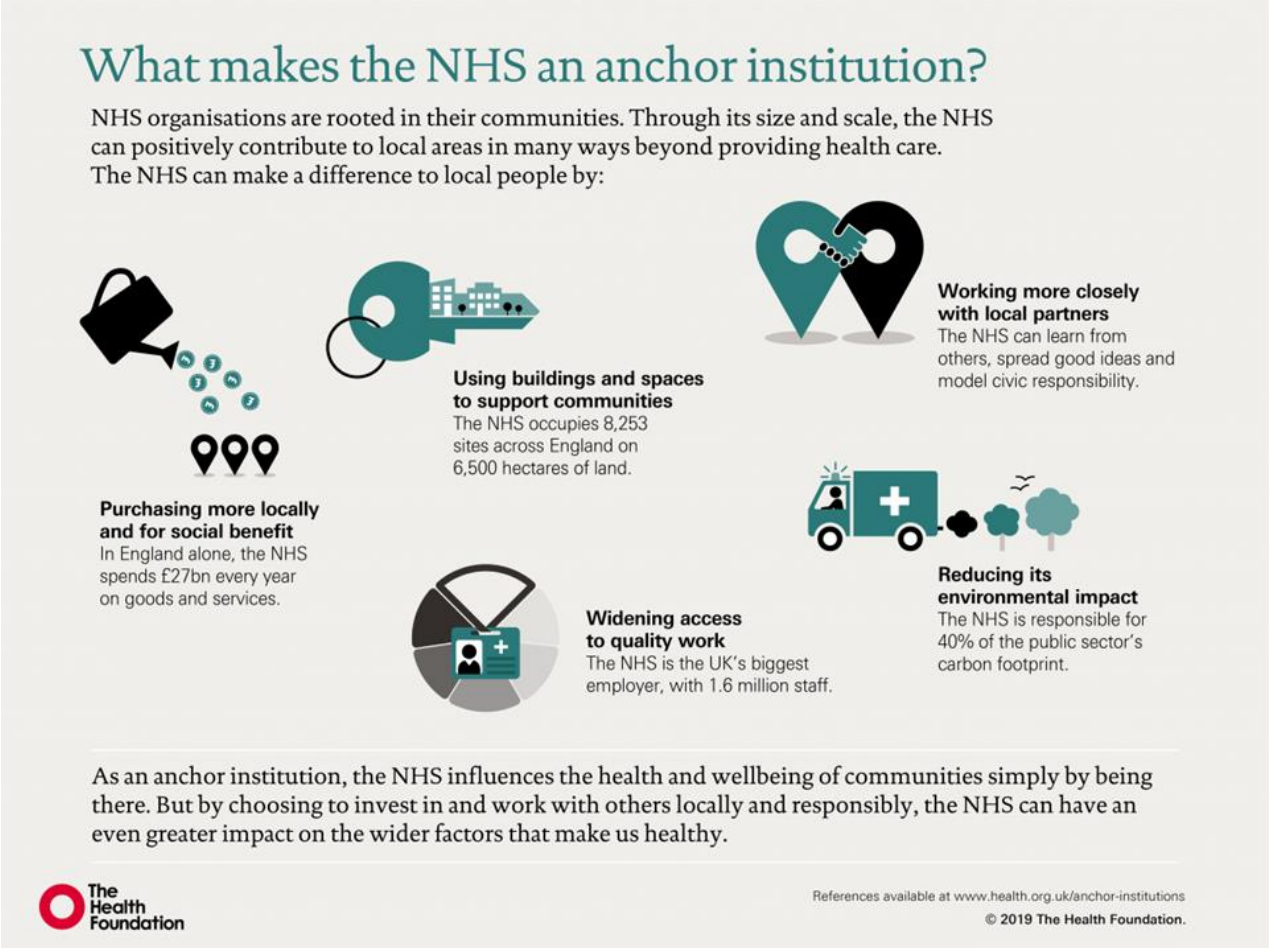


Figure 15 - What makes the NHS an anchor institution?

The Health Foundation has produced a categorisation of the ways in which NHS organisations can advance such priorities. They are set out in the figure below, and following sections describe, in relation

to each category, initiatives that are already under way in BCWB and further interventions that might be considered. [73] Other case studies from around the country are reported in the Local Government Association's report on *Social determinants of health and the role of local government*.[74]

Purchasing more locally and for social benefit

There are opportunities for NHS organisations – especially when acting in concert using their significant economic weight – to ensure that expenditure on goods and services brings the maximum benefit to local populations, including through market development activities and the inclusion of social value criteria.[75] Local businesses, especially small and medium enterprises (SME) can be proactively engaged with to enhance their readiness to understand NHS needs and to respond to NHS tenders, creating a business-base fit for a future in national and international supply chains. There is also potential for that engagement to generate innovative insights that support transformation of aspects of NHS service delivery. Embedding principles of social value in tenders and their quality assessment criteria can also bring benefits in terms of local training and employment and the reduced environmental impact of suppliers. Local purchasing can help to keep local resource in the locality and reduce unnecessary transport impacts, generating inclusive growth and a lower carbon economy.

Who did what?
Sandwell and West Birmingham NHS Trust committed to deploying a minimum of 2% of its future annual budget with local suppliers.
Why?
The NHS has significant purchasing power. Decisions about what the NHS decides to buy, and how, have ramifications on local population health and wellbeing.
What is the current or expected impact and learning?
Procuring and commissioning goods and services from local small and medium size enterprises (SMEs) and voluntary and community sector organisations can have an important economic impact, since resources spent locally have a multiplier effect and are reinvested in the local community at a faster rate than resources with national corporations. Some studies have shown an effect ranging between 1.7 and 2.1.

This theme aligns with the NHS Confederation recommendation to convene industry leaders to source potential new local supply chains and to help businesses better understand NHS needs and contribute to the design and delivery of services in new and innovative ways. Existing links with the West Midlands Academic Health Science Network and the Black Country Consortium can be used to facilitate engagement with local industry.

[73] A large selection of case studies is also provided in the most recent Marmot review - https://www.health.org.uk/sites/default/files/upload/publications/2020/Health%20Equity%20in%20England_The%20Marmot%20Review%2010%20Years%20On_full%20report.pdf
[74] https://www.local.gov.uk/sites/default/files/documents/22.52%20Social%20Determinants%20of%20Health_05_0.pdf , p.18 ff.
[75] https://www.sduhealth.org.uk/areas-of-focus/social-value.aspx

In Preston, six anchor institutions shifted local spending from £37.5m of £150m in 2012, to £135m in 2017, creating 1700 local jobs.[76] Care needs to be taken, however, that spending isn't simply transferred from one equally deprived area to another, and a regional approach may sometimes be more appropriate than a local one, to mitigate against this risk.

Using buildings and spaces to support communities

Who did what?
Walsall Together has located additional services in Blakenhall Village Centre - a community funded building which accommodates 2 GP practices, community pharmacy and children's services. These include two health and social care locality Teams, Rapid Response Team, Care and Quality Team, Intermediate Care Services and the Adult Community Management Team. It has also worked with the landlords to put on community events (e.g. learning events in the old library) and has an ambition to develop this into one of four health and wellbeing centres across Walsall.
Why?
Communities are more resilient when people are connected through social networks. Opening NHS buildings and land for community use can provide vital opportunities for social interaction.
What is the current or expected impact and learning?
The NHS influences the local economy through who it allows to operate within its facilities. By providing more opportunities for SMEs, and by working with organisations that promote social good, the NHS can further support community wealth development.

The NHS has a very substantial physical footprint, comprising some of the largest single-organisation sites in BCWB and a very varied and disparate estate. In 2014/15 there were 23 sites belong to NHS Trusts or Foundation Trusts in BCWB covering over 125 hectares of land and occupying over 500 billion square metres of floorspace. The Royal Wolverhampton NHS Trust held the largest estate, with over a quarter of the land and one third of the occupied floorspace.[77] Data on the primary care estate is less robust but 61 hectares of land were occupied by primary care organisations, representing over 179 billion square metres of occupied floorspace. GP practices in Walsall had the largest estate by site land area and occupied building space.

An 'anchor institution' approach to estates could include schemes such as developing 'One Public Estate', co-locating services across sectors wherever possible; exploring opportunities for the use of NHS land and facilities by community groups; and looking at options for developing surplus land/buildings for other purposes, such as affordable housing. Given the current shift away from office-based working, these opportunities may now be greater than ever. In doing so, the NHS could become a more active partner in local planning, contributing to fresh thinking about the future of places - the high street, commercial premises, the visitor economy and sustainable communities.

The NHS Confederation is promoting the embedding of health and care within national and local regeneration planning, ensuring a much greater alignment between health and care strategies and

[76] https://www.progressive-policy.net/downloads/files/Beyond-NHS.pdf
[77] http://www.strategyunitwm.nhs.uk/publications/economic-impact-nhs-spending-black-country-full-version

those relating to wider economic development, and explicitly measuring the impact of NHS capital investments on the local economy.

Working more closely with local partners

The NHS Confederation is advocating for local NHS organisations to participate in the development of an anchor network across all health and care bodies within the system footprint, with a joint, data-driven vision for how they can support the local economy, engaging with other anchors to understand where the value and impact of the NHS and social care can be maximised. It also proposes the development of local 'Civic Restoration Strategies' focused on improving the vibrancy of communities in partnership with the arts and culture sector, VCSE organisations and the small independent business community, promoting sustainable, local ideas which align health and wealth.

Action on school readiness has the potential to generate very significant benefits over extended time periods. Predictors of school readiness include access to high-quality childcare; parental warmth, acceptance and responsiveness; a learning-enabling home environment; perinatal care and access to primary care; and good nutrition (linked to affordability).[78]

Who did what?
Walsall Together (WT) partnership now includes Walsall Housing Group (WHG), and the relationship has been strengthened through a common chair between **Walsall Healthcare NHS Trust** and WHG, and by the WT Managing Director joining the WHG Board. WHG is 'more than just a landlord' and had already established a Health and Wellbeing Team to support its customers. WHG housing officers have now joined each of the WT locality teams.
Why?
Good housing is the building block for health and other determinants of health (e.g. employment). Including housing officers as part of the locality teams provides opportunities to target housing support for people with specific health problems and identifying health and social care problems early as part of housing support.
What is the current or expected impact and learning?
269 customers benefited from pop up health information and advice sessions. 723 people learnt how to be more active through WHG's Family and Schools Programmes. 47 people participated in Waist Away and 80% lost weight. 285 customers aged 50+ were supported by the 'Nifty over Fifty' healthy ageing programme

Collaboration also increases the potential to address loneliness and isolation in our communities. Evidence suggests that social isolation and loneliness are associated with 50% excess risk of coronary heart disease, broadly similar to the excess risk associated with work-related stress, but that when effective interventions are in place, the return on the investment can be substantial. The Family Action 'Well Family Service', for example, reduced the number of GP consultations, demonstrating a six-fold social return on investment.[79] Care models can be

[78] https://childandfamilyresearch.utexas.edu/evidence-base-predictors-school-readiness; https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/459828/School_readiness_10_Sep_15.pdf

[79] http://www.instituteofhealthequity.org/resources-reports/local-action-on-health-inequalities-reducing-social-isolation-across-the-lifecourse

transformed, through dialogue with other providers, so that they proactively target the reduction of inequalities and respond to the real circumstances and preferences of local communities or specific population cohorts. This could be particularly relevant in relation to mental health needs given the modelled impact of COVID effects on the demand for mental health services. A 2012 review[80] highlighted the following interventions:

- Workplace-based programmes are inexpensive to introduce (c.£80 per employee per year) with savings of up to £9 for every £1 invested, accruing mostly to employers through reduced absenteeism. The programmes include a health risk appraisal, and tailored information and advice.
- Suicide awareness training for GPs and other key health professionals and cognitive behaviour therapy (CBT) for those identified as at risk can increase the detection rate of suicide risk by 20% in the short term, and generates a return of £44 from each £1 invested in training for GPs, mostly linked to employment and productivity.
- CBT for people with medically unexplained symptoms in primary care reduces NHS costs (reduced GP consultations; A&E and other hospital attendance; reduced prescriptions) and work absenteeism, generating savings of £1.75 for every £1 invested for a comprehensive programme and £7.82 for a targeted programme, mostly accruing to the NHS.

Who did what?
The Royal Wolverhampton NHS Trust formed a partnership with Wolverhampton City Council and a range of private providers (e.g. Babylon) to advance the Digital Agenda, building on the success of the joint working in their shared Population Health Unit.
Why?
Working together with the City Council makes Wolverhampton a more attractive place for investment. Better digital infrastructure will support residents to live healthier lives, book appointments at a convenient time for work and family commitments and support the NHS and LA to make a more efficient and impactful offer.
What is the current or expected impact and learning?
5G and city fibre funding has been attracted, and 50% of outpatient appointments are now digital (surpassed 30% national target). This is not simply about video-conferencing but the whole process (e.g. digital solution to sending out invites, patient-led booking).

Agencies working together can also avoid poorer outcomes for citizens. A small-scale study relating to the mental health impacts of the 2008 recession found that the specific consequences of economic hardship such as being unable to find employment, losing a job, getting into debt, housing problems or benefit sanctions could be the final straw that triggers self-harm. It suggested that interventions to mitigate such triggers should include *providing practical advice about economic issues before difficulties become insurmountable and providing appropriate psychosocial support for vulnerable individuals*.[81] A broader systematic literature review of mental health outcomes in times of economic recession found that periods of recession correlate with higher

[80] https://ebmh.bmj.com/content/ebmental/15/3/54.full.pdf
[81] https://bmjopen.bmj.com/content/bmjopen/6/2/e010131.full.pdf

prevalence of common mental disorders, substance disorders, and ultimately suicidal behaviour, with key vulnerability including unemployment, having a precarious work situation, facing debts and economic strain, and having a pre-existing mental illness. Economic recession was also found to have *a severe and long-term impact on mental health in children and young people, especially if they face stress within the family as a result of economic hardship or parental unemployment*.[82]

Who did what?
Sandwell and West Birmingham NHS Trust commissioned Tribe, which combines ground-breaking technology and innovative social action, to help: 1) reduce inequalities in the care of older people and improve their health, wellbeing and inclusion by engaging, empowering and upskilling local citizens in the areas in which it operates to deliver to them personalised care and support. 2) stimulate local micro-enterprise and community activity to provide care and support, triggering economic growth (GDP per capita) particularly in areas of high inequality and giving value to paid care. 3) ensure the model is trusted by users and commissioners through assurance of services and skills.
Why?
The Tribe Project is repurposing a 'smart-cities' base technology to explore a geospatial data centred approach to care provision. At the core of the technology will be an innovative community 'need-matrix'. The matrix will be composed of a stratification of service demand and vulnerability index data consumed from Voluntary Community Sector (VCS), Local Government and Health datasets (Including Internet of things sensory systems). Public services will ultimately be able to identify the statistical probability where provision is projected to fail moves care from 'reactive' towards a 'preventative' agenda model. Focusing on these care 'dark patches' Tribe will work with Community Catalysts to stimulate community activity and development of micro-enterprises that can address the support shortfall. This model uses community need – and improved outcomes for older people - as an economic driver to facilitate the growth of micro-enterprises delivering ethical, high-impact self-employment. It uses co-design principles to ensure all stakeholders shape the implementation and validate outcomes.
What is the current or expected impact and learning?
• More carers and more care choice - Tribe will bring skilled community carers to national 'dark patches' where administrative costs are prohibitive, or no care provision currently exists facilitating a true person centred care model for individuals seeking help and support. • Reduce the cost of care - Tribe operates on a flat rate 3% administrative fee. Councils have indicated this will bring savings of up to 50% compared with current costs where care is commissioned via traditional means in deep rural areas. As a by-product of this, the intention is to use administrative savings to increase the wages of care workers.

Conversely, it notes improved mental health can play a significant role in economic growth, suggesting a double case for targeted action on the scale, nature and accessibility of mental health services at the

[82] https://bmcpublichealth.biomedcentral.com/track/pdf/10.1186/s12889-016-2720-y

present time. The World Health Organisation (WHO) argues that the mental health effects of a recession crisis can be mitigated through active labour market programmes, family support programmes, measures to limit alcohol consumption, the accessibility of primary care services to those at high risk of mental health problems, and support with financial debt management. To maintain mental health services through such times, WHO further recommends interventions to tackle the stigma of mental illness, building the case for investing in mental health, continuing the transformation of mental health services and ensuring universal access.[83]

In relation to collaborative action on housing, there appear to be significant benefits to be won. Analysis at EU level has identified that whilst the cost of addressing severe inadequacies in housing stock (e.g. mould, dampness and cold or structural damage) would be nearly €300bn, it could lead to healthcare savings in the first year alone of around €200bn, and therefore would provide a return on investments after just eighteen months.[84]

Widening access to quality work

Employment has been a significant focus of this report. This reflects both the expected impact of the COVID-related recession on local jobs and the pre-existing challenges around creating a greater proportion of higher skilled, higher paid jobs in BCWB.

Work by Public Health England and UCL Institute of Health Equity has identified actions that can be taken locally to promote good quality jobs and reduce health inequalities. These include local partners developing and encouraging roles in which workers are valued, receive a living wage at minimum, have opportunities for promotion, and are protected from adverse conditions. It also notes the importance in economically-deprived regions of working to improve the skills base of people in local and regional labour markets so that further skilled employment is attracted to the area.[85]

Who did what?
The Sandwell and West Birmingham NHS Trust pays all staff at or above the 'living wage'.
Why?
An important determinant of staff wellbeing is the terms and conditions of their employment, including receiving a fair wage and having a good work-life balance. Low pay can lead to financial hardship, trapping people in in-work poverty, with important implications for health and wellbeing. Being an anchor means ensuring the NHS provides secure employment and fair compensation so that all its staff can live with financial security, not least because in some areas the NHS is the largest employer.
What is the current or expected impact and learning?
On implementation, the salaries of 225 staff were increased. It is hoped that learning from this initiative will encourage system partners to follow suit.

[83] https://www.euro.who.int/__data/assets/pdf_file/0008/134999/e94837.pdf
[84] https://inherit.eu/wp-content/uploads/2017/06/INHERIT-Report-A4-Low-res_s.pdf
[85] http://www.instituteofhealthequity.org/resources-reports/local-action-on-health-inequalities-promoting-good-quality-jobs-to-reduce-health-inequalities-

Amongst the actions that NHS organisations can consider are nurturing health and care career aspirations in local schools; focusing recruitment on the local population, particularly the most deprived areas; advancing the skills of local employees; and becoming a living wage employer. There are also opportunities, as identified in the 2017 economic impact study, to do more to enabling informal carers and those with mental health or long-term conditions to remain in or get back into employment, increasing the productivity of the local economy and reducing the costs of workforce turnover. The NHS Confederation proposes making an explicit commitment to fill existing health and care vacancies with local people who are unemployed or currently economically inactive through launching targeted recruitment, focusing on making fuller use of apprenticeship schemes, establishing retraining schemes, and committing to guaranteed interviews.

Who did what?
The Royal Wolverhampton NHS Trust runs an apprenticeship programme that enhances employment prospects for young people (under 29) and creates opportunities to step into the NHS careers at levels 2-6.
Why?
There is a strong link between work and health. For work to have a positive impact on health, it must be 'good work' – providing stable employment, paying a living wage and offering fair working conditions, work-life balance and career progression. The Trust developed its apprenticeship scheme to meet workforce gaps, provide succession planning and create an entry-level route into the NHS. This can contribute to reducing unemployment.
What is the current or expected impact and learning?
274 apprenticeships have been offered to BCWB young people since 2017 (104 clinical, 180 non-clinical, 15 technical). The aim is to achieve 185 apprenticeship starts per year by 2020 (the quota set by the Modern Apprenticeship Programme). Most places are for admin roles, and the Trust is close to its target of 70% of graduating apprentices finding substantive employment in the Trust or another NHS organisation. The need for learners to be able to access pastoral support from internal trainers has been recognised. The Trust has become a Cornerstone Employer in 2019 and works with Princes Trust to deliver packages to get young people ready for the world or work through the 'Get Into' programme; undertakes joint work with the DWP and City Council through the 'Wolves at Work' Programme; and has signed an armed forces covenant to develop a talent pipeline from resettling ex-servicemen and their families. The initiative has helped to make the Trust more representative of the community it serves.

The NHS has a number of enduring workforce challenges but has not yet fully explored the potential for a 'grow your own' approach that combines introducing new roles that draw on the characteristics and skills of the local population, with developing training pathways that enable progression from into higher skilled roles (rather than importing to those roles from other areas). Evidence from the USA relating to roles similar to UK 'health coaches', for example, highlights how *culturally competent guidance provided by navigators from a patient's own ethnic community might play a major role in overcoming barriers to healthcare*. The roles include providing culturally tailored health education,

Who did what?
Black Country Healthcare NHS FT appointed two new Senior Community Development Workers to support wider work around tackling health inequalities in BAME communities and establishing vital links with communities to improve access to and experiences of mental health services.
Why?
The Trust recognised there was a need to further strengthen the resilience of Black, Asian and Minority Ethnic (BAME) communities, and its understanding of the impact of COVID-19 on them. The combination of making links with voluntary organisations, setting up grassroots initiatives, and being able to work closely with internal colleagues provides a uniquely valuable way of supporting the COVID-19 risk assessment process and the development of equality and diversity projects across the Trust.
What is the current or expected impact and learning?
Across the area, the team has been collating data, resources and information to identify gaps and barriers to services and to improve mental health experience and outcomes of BAME communities. It is currently developing a webinar that will bring voluntary sector/stakeholder organisations together to further discuss the impact of COVID-19 on BAME communities and how that might impact service delivery and change. If you would like to find out more about the work of our senior community development workers please email nazima.esscopri1@nhs.net or Fareen.hussain1@nhs.net.

Who did what?
Six Primary Care Networks (PCNs) across the Black Country and West Birmingham have been working with professional colleagues in nursing, mental health, social care, and public health to improve the health and wellbeing of vulnerable patients and populations. The new care models created by PCNs are adapted to neighbourhood and patient context, but a common innovation adopted is a new team role for people recruited for their empathy, relational skills and lived experience within the community. They join frontline teams of GPs or other professionals at a ratio of between 3:1 and to 5:1.
Why?
These new workers increase 2- to 3-fold the amount of time patients are engaged by primary care services. This increase in time and the accompanying listening skills facilitates the use of proven engagement techniques such as shared decision making, motivational interviewing, and cognitive behavioural therapy to support people to make their choices matter for health and wellbeing. Recruiting staff from the local population with people, and supporting them with technical skills development, widens access to quality work for the local population and increases services' understanding of the context of the patient.
What is the current or expected impact and learning?
Implementation was delayed due to COVID-19. One PCN implemented earlier and has seen a reduction in reactive use of primary, community and acute care with many case studies of how the wider determinants of health have been addressed including poor housing and loneliness. Education of this new workforce will be key.

lifestyle workshops, self-care training and guidance to overcome barriers to accessing the healthcare system. In the Hispanic community, navigator activities led to significant reduction of HbA1c levels among adults with type 2 diabetes, with a cost effectiveness of $33,319 per QALY gained (interventions for diabetes control or management are considered cost-effective if they fall under the threshold of $50,000 per QALY gained).[86] Other evidence shows that people with experience of a condition (e.g. parents of children accessing intellectual disability services), also generate similar benefits.[87] There is also evidence to support the focusing of work-related initiatives on younger age groups because of the duration of the adverse health impacts of unemployment (especially mental health) both for the workers themselves and for their children.[88]

Who did what?
Black Country Healthcare NHS FT has developed an award-winning Employment Support Service that delivers: • Individual Placement Support (IPS) for users of secondary mental health services – anyone who is under the care of a psychiatrist and has a care coordinator • Thrive into work, providing supports adults (18+) with a mental health and/or physical health condition, who are out of work and want to work. • Thrive at work, a WMCA project that supports employees living with health conditions to stay in employment, partnering with recruitment and employment specialists to facilitate adjustments at work that provide an inclusive work environment. • Bridges to work, supporting adults 25+ with mental health problems. • Building Better Opportunities (BBO), providing a BAME vocational specialist and BAME-specific vocational support groups to increase engagement with BAME communities.
Why?
Being in good work is better for your health than being out of work. There is clear evidence that good work improves health and wellbeing across people's lives and protects against social exclusion. Conversely, unemployment is bad for health and wellbeing, as it is associated with an increased risk of mortality and morbidity. For many individuals, in particularly those with long term conditions such as mental health problems, musculoskeletal conditions and disabilities, health issues can be a barrier to gaining and retaining employment.
What is the current or expected impact and learning?
Between April 2019 and June 2020, 617 people were supported by IPS – c.28% were from BAME communities. In 30 months, 1,500 people have participated in Thrive into work, 450 have accessed work and 180 are currently being supported. Over 300 business across the West Midlands have signed up to the programme. Since 2017, 326 clients have been supported by BBO. 21% of participants were from BAME communities. Some participants have not felt safe continuing to access employment support during COVID-19 but the service has continued to provide a welfare role.

[86] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4714538/
[87] https://onlinelibrary.wiley.com/doi/abs/10.1111/jar.12630
[88] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3076863/

Reducing environmental impact

The NHS bears a significant impact of poor quality environments, but it also contributes materially to their creation. There are significant opportunities to reduce the economic and environmental cost of service delivery, including moving to virtual appointments, electrifying the NHS fleet, home-working for office-based staff. These opportunities are clearly set out in *Delivering a 'Net Zero' National Health Service* which demonstrates the potential nationally to save over 5,700 lives every year from improved air quality.[89]

There is substantial and growing evidence for the physical and mental health benefits of spending time in the natural environment, but children are engaging less with nature. *Equality of access to, and connection with, a healthy natural environment would save billions of pounds in healthcare costs and reduced economic activity every year. There are opportunities to improve health through the choices government, regulators, businesses and individuals make in creating and contributing to healthier, greener and more accessible environments.*[90]

Who did what?
Dudley Group NHS FT, like many providers, has facilitated a very significant increase in virtual appointments (by phone or video).
Why?
The move to virtual appointments reduces the environmental impact (and others costs) of staff and patient travel, avoids the need for people to make difficult journeys on public transport (especially with COVID-associated risks) and reduces the productivity losses from time taken off work.
What is the current or expected impact and learning?
A 2018 study by the Strategy Unit for West Midlands CCGs estimated CO2 reductions of upg to 533,535kg annually through reduced patient travel, should face-to-face outpatient appointments reduce by 10% across all specialties. There were also benefits expected in productivity (£5.34m annually) and patient cost impact (£973k annually).

Who did what?
The Royal Wolverhampton NHS Trust has agreed to build a solar farm on a disused site that is too polluted for other uses. The farm will provide all the electricity needs of the Trust.
Why?
NHS organisations have a significant impact on the environment and are some of the largest contributors to climate change and air pollution. The NHS alone is responsible for 40% of public sector emissions in England.
What is the current or expected impact and learning?
By investing in solar energy, the Trust expects to significantly reduce its environmental impact.

[89] https://www.england.nhs.uk/greenernhs/publication/delivering-a-net-zero-national-health-service/
[90] https://www.gov.uk/government/publications/state-of-the-environment/state-of-the-environment-health-people-and-the-environment

The *Delivering a 'Net Zero' National Health Service* report additionally sets out a broad range of mechanisms through which the NHS and its supply chain can achieve net zero carbon emissions (Figure 16).[91]

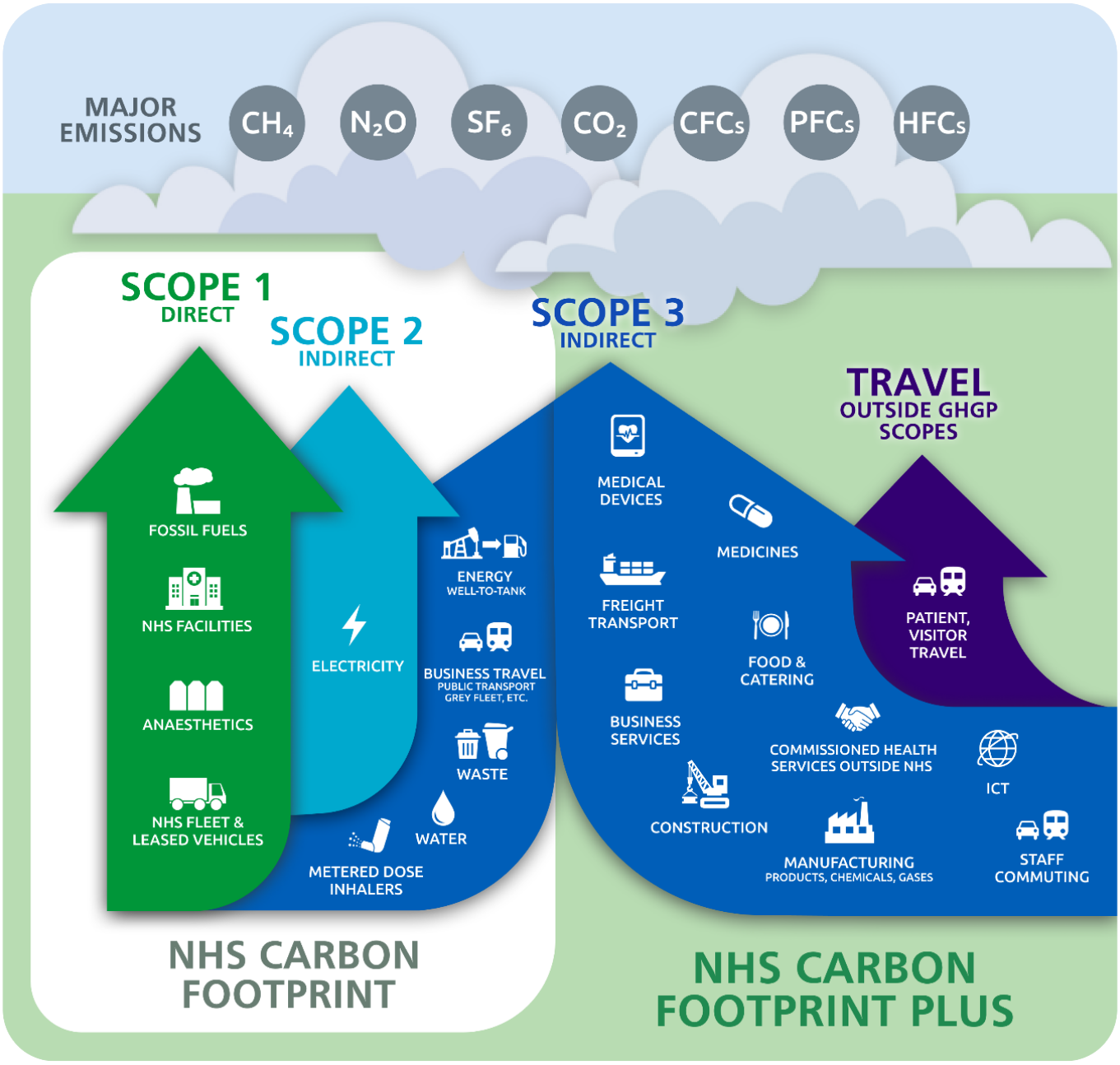


Figure 16 - Net Zero opportunities for the NHS

The report also highlights the links between climate change, sustainable development and health inequalities, such as:

[91] https://www.england.nhs.uk/greenernhs/publication/delivering-a-net-zero-national-health-service/

- *Access to green spaces has positive mental and physical health impacts, and these beneficial effects are greatest for those from socioeconomically disadvantaged groups. However, these groups also have the least access to green spaces.*
- *Black, Asian and minority ethnic groups are disproportionately affected by high pollution levels, and children or women exposed to air pollution experience elevated risk of developing health conditions.*
- *As climate change worsens the demand for energy will increase. This may increase the price of household fuel, which is likely to make it harder for poorer families to maintain good health, particularly in poorly insulated homes.*

Exploring System Priorities

The purpose of this final section is to provide a frame for initial stakeholder engagement around the evidence and analysis presented above. Given the breadth of the issues involved and the huge range of interventions that could be considered in relation to each issue, there is a need to co-produce a set of initial system priorities. Once these priorities have been identified, Phase 2 of the WHoLE programme can commence when further engagement, evidence and analytical work will be undertaken to support the development, initiation and evaluation of potential interventions to reduce the socio-economic impacts of COVID-19 and their health consequences.

The initial phase of high-level engagement is expected to take place in November and December 2020, and to focus on Local Authority Health and Wellbeing Boards, Healthier Futures partner organisations in the NHS and local government, and the local voluntary and community sector. Whilst detailed public engagement is largely intended for Phase 2, versions of this report will be made available to the public. Going forward, the governance of the programme is expected to sit with the Health Inequalities Board of the Healthier Futures Partnership. There are two aims of this engagement:

1. To increase understanding of the interactions between the contexts in which citizens live (social, economic, environmental) and their health; and
2. To inform the recommendation of priority areas for whole-system action in Phase 2 of the programme. These are expected to be determined by the Healthier Futures Partnership Board in January 2021, following the proposed engagement.

In relation to 2, above, an initial set of suggested target outcomes and potential intervention mechanisms has been developed and is summarised in the table overleaf (Table 19) under a defined WHoLE programme category. These categories are aligned with the proportionate impact of specific health determinants (derived from the Country Health Rankings model[92]) and the recommendations of *Health Equity in England: The Marmot Review 10 Years On*.[93]

- **Target Socio-economic Outcomes** are the suggested benefits that whole-system action might seek to achieve, leading additionally to improved healthy life expectancy (see Figure 17).
- **Potential Intervention Mechanisms**, drawn from Marmot Review recommendations and other evidence in this report, are how local partners could seek collaboratively to generate the target outcomes.
- **Available Public Sector Tools** are the high-level opportunities that public sector bodies have available for operating the potential intervention mechanisms.
- In Phase 2 of the programme, it is expected that specific **Candidate Interventions** will be identified and developed for approval that employ some combination of the available tools. This process should prioritise equality impact analysis and engagement with protected groups.

[92] https://pophealthmetrics.biomedcentral.com/articles/10.1186/s12963-015-0044-2
[93] https://www.health.org.uk/publications/reports/the-marmot-review-10-years-on

	Education and Skills	Employment and Income	Community and Environment
County Health Ranking Weightings *(as % of the determinants of health)*	• 5% high school graduation (~5 GCSEs at C or above) • 5% some college education	• 10% unemployment • 10% children in poverty	• 2.5% air pollution – particulate matter • 2.5% inadequate social support
Marmot Recommendations	• Giving Every Child the Best Start in Life • Enabling all Children, Young People and Adults to Maximise their Capabilities and Have Control over their Lives	• Creating Fair Employment and Good Work for All • Ensuring a Healthy Standard of Living for All	• Create Healthy and Sustainable Places and Communities
Target Socio-economic Outcomes	• Greater school readiness • Better skills and qualifications	• Fuller employment in better jobs • Higher incomes	• Better environments (social, economic, physical and natural)
Potential Intervention Mechanisms	• Increasing early years access and support • Reducing child poverty • Increasing pay and qualification requirements for the childcare workforce • Improving pupils' physical and mental wellbeing	• Becoming living wage employers • Investing more in local procurement (including local employment and living wage jobs) under the 2012 Social Value Act • Increasing higher value apprenticeships and in-work training • Developing new roles and training paths in public sector professions	• Increasing the resilience of local communities and their economic, social and cultural assets • Improving air quality in line with national and local net zero targets • Increasing the quality and affordability of stable housing • Ensuring best value is being realised from public sector land and buildings
Available Public Sector Tools	• Adjusting public sector service models to increase wider socio-economic benefits and to reduce inequalities • Enhancing how potential and existing public sector staff (and the employees of public sector contract holders) are nurtured, recruited, trained and supported • Deriving greater socio-economic benefit from public sector financial and physical resources (including in the supply chain)		
Candidate Interventions	• *To be co-produced in Phase 2*		

Table 19 - Framework for collaborative discussion and action

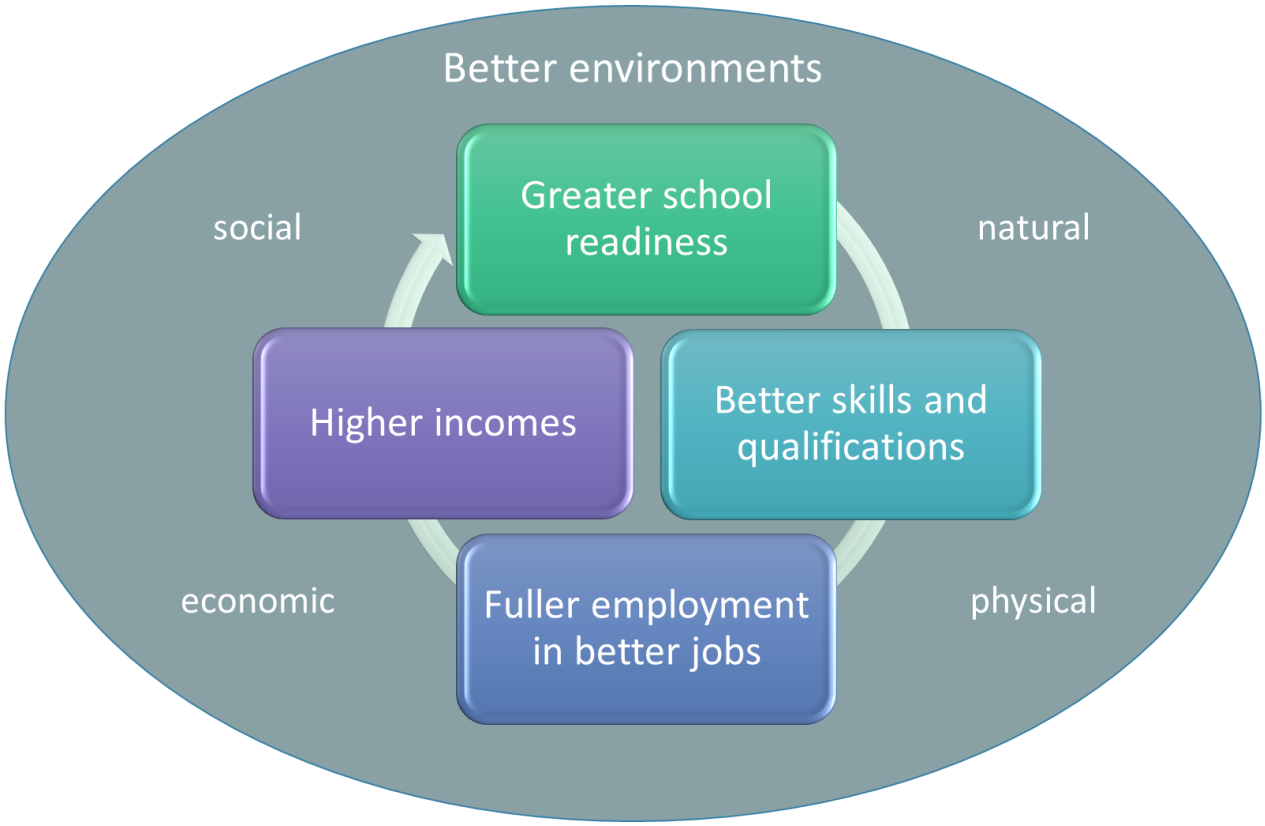


Figure 17 - Illustration of relationship between target outcomes

During the planned initial engagement period, there are four key questions to be explored in preparation for Phase 2:

1. **What priority should be given to each of the target socio-economic outcomes, and why?** Action in relation to any outcome will bring benefits in others, given how closely they are related, but some may have the potential to do this to a greater extent than others. Each also has the potential to improve healthy life expectancy. This is a question about where best to intervene in the cycle.
2. **Are there additional intervention mechanisms that should be considered for realising the target outcomes?** These must be mechanisms that can be affected by the tools available to public sector organisations.
3. **What specific candidate interventions might be considered?** This is a question about the action local partners could consider taking together.
4. **Are there specific population cohorts (e.g. age groups, genders, ethnicities, deprivation quintiles, other groups) that whole-system action should focus on?** The differential needs and experiences of such groups should be considered equitably in relation to any candidate intervention, but the evidence presented above, and local experience, may suggest a case for an enhanced focus on certain cohorts.

Initial citizen engagement around these themes was conducted through the Healthier Futures Partnership's Citizen Voices Panel in September 2020 (Appendix Three – Citizen Panel Survey Data). Those who responded were largely from the Dudley and Sandwell and West Birmingham CCG areas (84%), of White ethnicity (88%), female (66%) over 40 years of age (59%, 25% were in the 60-74 age group), and from a broad range of geo-demographic categories. The relatively unrepresentative nature of the self-selected respondents inhibits a demographic analysis of the results.

The survey found that:

- The socio-economic determinants that reportedly affect respondent's **physical health** a lot (pre-COVID) are low income (22%), lack of work (16%) and poor or no housing (15%).
- Similarly, though to a greater degree, the socio-economic determinants that reportedly affect respondent's **mental health** a lot (pre-COVID) are low income (28%), lack of work (21%), crime or experience of the justice system (17%) and poor or no housing (12%).
- The aspects of life that had been significantly affected by the **COVID-19** pandemic and association policy measures were reported to be respondents' mental health (40%), close relationships (23%), education (20%) and income (20%). Only two panel members knew they had had COVID-19.
- Looking to the **future**, albeit through COVID glasses –
    - respondents' main concerns related to not being able to meet people because of COVID (26%), losing and/or not being able to find work (18%), and coping with low pay (14%), and
    - the external factors that respondents felt would most benefit their physical and mental health were income (23%), employment (23%) and skills/qualifications (8%).

These findings broadly align with the target outcomes identified above, and the evidence and analysis presented elsewhere in this report. In particular, there is a recurring focus on the significance of employment and income. The survey data also provides further evidence of the effects of COVID on mental and physical health, both directly through experience of or anxiety around the disease and indirectly through its impact on the key socio-economic determinants of health.

In addition to specific population-focused projects that are expected to emerge in Phase 2, consideration should also be given to the development of a WHoLE appraisal framework and WHoLE dashboard to inform system focus and decision-making. Operating like the New Zealand Treasury's ***Living Standards Framework***[94], it would enable the wider determinants of health and wellbeing to be monitored and to be used alongside other established quality and financial measures in determining courses of action. This would be particularly value in a context where some of the interventions that might be considered may have higher initial costs for one or more partner organisation but which, when seen in wider perspective, offer greater longer term benefits.

[94] https://lsfdashboard.treasury.govt.nz/wellbeing/

Effective links should also be made within Healthier Futures structures between interventions to address the wider determinants of health and those focused on carbon reduction since, in many cases, there will be significant complementarity.

Organizational and sectoral boundaries encourage siloed decision-making, and in ways that risk depriving our communities of both socio-economic and health benefits. Developing a whole-system framework, reflecting the evidence summarised in this discussion document, could enable system partners to assess the whole-system impact of their decisions and to consider more holistically what makes for the common good.

Appendix One – WHoLE Programme Expert Advisory Group

The membership of the programme's advisory group is as follows:

- Lucy Heath, Healthier Futures Academy Director – Chair
- Ian Carey for Sarah Middleton, CEO Black Country Consortium
- Sean Russell, WMCA Director of Implementation
- Marion Gibbon for Justin Varney, DPH Birmingham City Council (for BCWB DsPH)
- Dr Jonathan Odum, MD Royal Wolverhampton NHS Trust and BCWB CLG Lead
- Dr Chris Weiner, MD Dudley Integrated Health and Care NHS Trust
- Kuli Kaur-Wilson for Mark Axcell, CEO Black Country Healthcare NHS FT
- Julian Hobbs, MD DGFT, for Dame Yve Buckland, Chair DGFT, Pro-Chancellor Aston University
- Daren Fradgley, Director of Integration, Walsall Healthcare NHS Trust
- Ian Darch, CEO Wolverhampton Voluntary Sector Council (linking to other BCWB VSCs)
- Chris Handy, CEO Accord Housing Group, NED Dudley CCG, BC LEP Board Member
- Matt Hartland, Deputy Accountable Officer CCGs and STP planning lead
- Anthony Nicholls, Head of Intelligence, Dudley CCG
- David Frith, Principal Consultant, The Strategy Unit (Programme Director, Phase 1)

Additional thanks are due to Delma Dwight and Megan Boehm of the Black Country Consortium's Economic Intelligence Unit and to Alison Turner and Anastasiia Zharinova of The Strategy Unit.

Appendix Two – Methodology for Prospective Modelling of Economic Scenarios

Methodology

The prospective modelling included in this report is derived from two interactive tools developed for the WHoLE Programme by The Strategy Unit. These tools illustrate how both mental healthcare activity and physical healthcare activity within the NHS in the Black Country and West Birmingham could increase in the period 2020-2024 due to COVID-related changes in the unemployment rate.

The tools are based on evidence from the 2008 recession that demonstrates the link between employment and the prevalence of long-term conditions.[95] This evidence suggests that for every 1% change in the unemployment rate there will be a larger percentage change in the prevalence rates of certain disease groups. Changes in prevalence rates would naturally lead to an increase in demand for healthcare services.

The four disease areas considered are musculoskeletal, cardiovascular, respiratory and mental health:

Disease group	Conditions
Musculoskeletal	Problems or disabilities (including arthritis or rheumatism) connected with … arms or hands; … legs or feet; … back or neck
Cardiovascular	Heart, blood pressure or blood circulation problems
Respiratory	Chest or breathing problems, asthma, bronchitis
Mental health	Depression, bad nerves or anxiety; Mental illness, or suffer from phobia, panics or other nervous disorders

Calculating potential demand pressures on local healthcare services involved the following four steps:

1. Like the study by Janke et al, prevalence rates for long-term conditions in 2019 were calculated using data from the Labour Force Survey. The proportion of respondents in the Black Country and West Birmingham STP having a condition within one of the above disease groups was established by dividing the number of respondents in the area confirming that they have a certain health condition by the total number of respondents in the area.
2. Changes in prevalence rates were calculated based on the changes in unemployment rate and long-run employment elasticity. Employment elasticities show how the prevalence rate of certain long-term conditions will change if employment changes by 1 percentage point. For example, a 1 percentage point increase in unemployment in 2020 will increase the prevalence of common mental health conditions by 2.3% in 2020 and by a further 1.4% in 2021. Janke et al provide quarterly elasticities for each disease group. To convert this to an annual effect, the mid-year point was used. Employment elasticities to prevalence are presented in the table below. To

[95] Janke, Katharina, et al. "Macroeconomic Conditions and Health in Britain: Aggregation, Dynamics and Local Area Heterogeneity." (2020)

identify the impact of unemployment (rather than employment) on the prevalence, we have changed the sign of the elasticity.

	Year1	Year2	Year3	Year4	Year5
Mental health conditions	-0.023	-0.014	-0.003	-0.001	0.000
Cardiovascular disease	-0.017	-0.005	-0.001	0.000	0.000
Respiratory disease	-0.015	-0.004	-0.001	0.000	0.000
Musculoskeletal conditions	-0.016	-0.006	-0.002	-0.001	-0.001

3. The evidence suggests that the effect of a change in employment rate on health lasts for approximately 5 years and slowly decreases over those 20 quarters. So, each year of the five years considered initiates a new cycle based on the unemployment rate at the beginning of each cycle. Changes in prevalence rates for each scenario and each disease group are presented below.

Mental Health					
Upside scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	9.6%	5.9%	1.1%	0.4%	0.2%
2021		-5%	-3%	-1%	0%
2022			-4%	0%	0%
2023				0%	0%
2024					0%
Central scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	12%	7%	1%	0%	0%
2021		3%	2%	0%	0%
2022			-8%	-5%	-1%
2023				-2%	-1%
2024					-1%
Downside scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	12%	8%	1%	1%	0%
2021		6%	4%	1%	0%
2022			-8%	-5%	-1%
2023				-3%	-2%
2024					-1%

Physical Health - cardiovascular					
Upside scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	7%	2%	1%	0%	0%
2021		-4%	-1%	0%	0%
2022			-3%	-1%	0%
2023				0%	0%
2024					0%
Central scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	8%	3%	1%	0%	0%
2021		2%	1%	0%	0%
2022			-5%	-2%	0%
2023				-2%	-1%
2024					-1%
Downside scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	9%	3%	1%	0%	0%
2021		4%	1%	0%	0%
2022			-6%	2%	0%
2023				-2%	-1%
2024					-1%

Physical Health - respiratory					
Upside scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	6%	2%	0%	0%	0%
2021		-4%	-1%	0%	0%
2022			-2%	-1%	0%
2023				0%	0%
2024					0%
Central scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	8%	2%	0%	0%	0%
2021		2%	1%	0%	0%
2022			-5%	-1%	0%
2023				-2%	0%
2024					-1%
Downside scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	8%	2%	0%	0%	0%
2021		4%	1%	0%	0%
2022			-5%	-1%	0%
2023				-2%	0%
2024					-1%

Physical Health - musculoskeletal					
Upside scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	7%	3%	1%	0%	0%
2021		-4%	-1%	0%	0%
2022			-3%	-1%	0%
2023				0%	0%
2024					0%
Central scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	8%	3%	1%	0%	0%
2021		2%	1%	0%	0%
2022			-5%	-2%	-1%
2023				-2%	-1%
2024					-1%
Downside scenario					
Year to year	*2020*	*2021*	*2022*	*2023*	*2024*
2020	9%	3%	1%	1%	0%
2021		4%	2%	1%	0%
2022			-6%	-2%	-1%
2023				-2%	-1%
2024					-1%

4. An increase in the prevalence rate will increase the demand on healthcare services. It is assumed that the prevalence to service use ratio remains constant as prevalence increases. For example, if 1,000 people had a respiratory condition and used 2,000 appointments, when prevalence increases to 1,100 people, 2,200 appointments will be utilised.

In addition to service use, the research identified a potential increase in the number of suicides. Stuckler et al (2011) identified that an increase in unemployment of 3% will increase the suicide rate by 4.45%.[96] According to Office for Budget Responsibility forecasts, in 2020 the unemployment rate will increase by more than 3%. This means that the suicide rate in the Black Country and West Birmingham STP would be expected to increase by 4.45%.

Assumptions

The following assumptions have been made:

1. The research considered the residents of the Black Country and West Birmingham STP only. Activity in BCWB organisations for non-BCWB patients has been excluded but might be expected to increase by very similar proportions given the socioeconomic similarities in surrounding areas.
2. To illustrate the impact of unemployment rate changes alone, demographic change over the period has been excluded from the analysis but should be considered if the tools are used for planning purposes. Population estimates for mid 2019 from Office for National Statistics (ONS) were used for all following years.
3. Only activity provided to those of working age (15-64 years) has been included on the basis that this is the cohort most likely to be exposed to the direct impact of unemployment. Similar to the work by Janke et al, the cohort was not adjusted by proportion of economic active population due to data limitations.
4. Changes in unemployment rate over the modelled period are based on the Office for Budget Responsibility (OBR) forecasts and have been adjusted for the Black Country and West Birmingham STP by assuming the 2019 differential between local and notional rates neither increases nor decreases.
5. Only local providers were included in the model. For the mental health services, Birmingham and Solihull Mental Health NHS Foundation Trust, Birmingham Community Healthcare NHS Trust, Dudley and Walsall Mental Health Partnership NHS Trust and Black Country Partnership NHS Trust were included. For the physical health, Sandwell and West Birmingham Hospitals NHS Trust, the Dudley Group NHS Foundation Trust, the Royal Wolverhampton NHS Trust and Walsall Healthcare NHS Trust were included.
6. Different service categories were considered for different disease groups. For physical health, we have included A&E, outpatient appointments and inpatient admissions (elective and non-

[96] Stuckler, D., Basu, S., Suhrcke, M., Coutts, A. and McKee, M., 2011. Effects of the 2008 recession on health: a first look at European data. The Lancet, 378(9786), pp.124-125.

elective). For mental health activity, referrals, attended care contacts and hospital stays were considered. Primary and community care data is excluded since the former is not available and the latter cannot be identified by healthcare condition.

7. To identify the area of residence and Primary Care Network (PCN), each record was matched by a GP Code. However, it was impossible to identify PCN for the Mental Health services. Instead of GP code, the Local Authority of residence field was used for these services.
8. In practice, service use will likely to be constrained due to limits in staff and available resources (especially for elective inpatient admissions and outpatient appointments). Equally, changes to services models may affect the efficiency of delivery. The modelling assumes no supply side changes from the 2019 baseline period, including the effects of organisational mergers or other changes.

Data

The main data sources are presented in the table below:

Data element	Source
Population Estimates	Office for National Statistics
Prevalence rate of long-term conditions in 2019	Labour Force Survey (2019)
Dynamics of unemployment rates	Based on the Office for Budget Responsibility (OBR) forecast
Activity estimates: physical health	Secondary Uses Service (SUS) data
Activity estimates: mental health	Mental Health Services Data Set (MHDS)
Suicides rate in the area	Public Health England, average of 4 CCGs

Appendix Three – Citizen Panel Survey Data

The survey was completed by fifty-six members of the panel during the second half of September 2020. Of those responding, two reported having had COVID-19 and fifteen said they did not know whether they had had the disease.

Responses were as follows. The survey also asked about access to mental health support but those findings are not included here.

1. Thinking about before the Covid-19 pandemic, to what extent have the following things affected your physical health at any time in your life?

	A lot	A little	Not at all	Don't know
Lack of qualifications/skills	7.4%	25.9%	57.4%	9.3%
Lack of work	16.4%	9.1%	67.3%	7.3%
Low income	22.2%	24.1%	51.9%	1.9%
Poor or no housing	15.1%	7.5%	75.5%	1.9%
Local environment/air quality	3.8%	37.7%	47.2%	11.3%
Crime or experience of the justice system	5.6%	18.5%	66.7%	9.3%

2. Thinking about before the Covid-19 pandemic, to what extent have the following things affected your mental health at any time in your life?

	A lot	A little	Not at all	Don't know
Lack of qualifications/skills	9.6%	28.8%	53.8%	7.7%
Lack of work	20.8%	18.9%	54.7%	5.7%
Low income	28.3%	26.4%	43.4%	1.9%
Poor or no housing	11.8%	17.6%	70.6%	0.0%
Local environment/air quality	7.5%	22.6%	60.4%	9.4%
Crime or experience of the justice system	17.3%	25.0%	53.8%	3.8%

3. Has the Covid pandemic/lockdown led to difficulties with your:

	A lot	A little	Not at all	Don't know
Income	20.0%	27.3%	50.9%	1.8%
Physical health	13.0%	42.6%	44.4%	0.0%
Mental health	40.4%	40.4%	19.2%	0.0%
Close relationships	22.6%	41.5%	35.8%	0.0%
Education	20.4%	18.5%	61.1%	0.0%
Housing	9.3%	1.9%	87.0%	1.9%
Other	8.0%	6.0%	70.0%	16.0%

'Other' responses included:

- *My child's mental health*
- *Getting the correct help from my doctor's practice*
- *Getting essential goods and shopping.*
- *Primarily massive disagreements with long-time friends about how to slow down the pandemic. It is serious how intense disagreements can become and friends of decades have chose to adopt a careless denial about the need to maintain safe habits.*
- *Father's cancer being diagnosed too late and now terminal.*
- *Not being able to go and see family and friends.*
- *"The lack of contact with family members when you have no sign of c19 or a temperature*
- *Not being able to use your own judgement with your families health. I can understand the need to isolate from strangers But family your not going to put your children in danger."*
- *Found it very hard to be shielded and felt like I'd been put there then no body bother just left me to get on with it. Now I can get out I'm finding it hard to get motivated and to get my weight under control*
- *Future plans*
- *Freedom to do things, especially dropping in to see family and friends when we want to. Struggled with that aspect a lot*

4. What are you most concerned about for the future?

Not having the right qualifications/skills	7.8%
Losing my job/struggling to find work	18.4%
Coping with low pay	13.5%
Problems with getting/keeping decent housing	7.1%
The effects of pollution or other problems in my local environment	8.5%
Being a victim of crime	9.9%
Having a bad experience of being in the justice system	2.1%
Not being able to meet people because of Covid	26.2%
Other (please specify)	6.4%

'Other' responses included:

- *losing my disability benefits and family members*
- *Future work opportunities for my family*
- *Unfairness*

5. What 3 changes in things outside your control (e.g. work, income, environment, education and skills) would make the greatest different to your mental and/or physical health?

Income	23.3%
Employment	23.3%
Skills/qualifications	8.2%
Better personal/community relations/support	5.5%
Emotional and mental health support	4.1%
Access to physical activity opportunities	4.1%
Better health	4.1%
Better access to healthcare	4.1%
Environment	2.7%
Housing	2.7%
COVID-related:	17.8%
end to pandemic	
ability to see people/get around	
impact on schools/universities	

6. What do you do in your life that helps your mental wellbeing?

Socialising (including virtually) with family, friends and others	32.1%
Exercise (including walking)	29.5%
Hobbies and interests	16.7%
Relaxation, quietness and meditation	12.8%
Working	5.1%
Other: being alone/without pain and good diet	3.8%

7. Demographic profile of respondents

Age group	**Count**
17-21	7
22-29	7
30-39	9
40-49	10
50-59	8
60-74	14
75+	1
Grand Total	**56**

Clinical Commissioning Group	**Count**
NHS Dudley CCG	24
NHS Sandwell and West Birmingham CCG	23
NHS Walsall CCG	7
NHS Wolverhampton CCG	2
Grand Total	**56**

Gender	**Count**
Female	37
Male	19
Grand Total	**56**

Ethnic group	Count
Asian or Asian British - Indian	1
Asian or Asian British - Pakistani	2
Black or Black British - Caribbean	1
Mixed - White and Asian	1
Not stated	2
White - English, Welsh, Scottish, Northern Irish, British	47
White - Other	2
Grand Total	**56**

Acorn group	Count
Career Climbers [E]	1
Countryside Communities [F]	2
Difficult Circumstances [Q]	8
Executive Wealth [B]	1
Mature Money [C]	1
Modest Means [L]	5
Poorer Pensioners [N]	2
Starting Out [J]	3
Steady Neighbourhoods [H]	7
Striving Families [M]	10
Struggling Estates [P]	5
Successful Suburbs [G]	4
Young Hardship [O]	7
Grand Total	**56**

Disability	Count
A learning disability	1
A mental health problem	5
A mental health problem, A learning disability	2
A physical disability	4
A physical disability, A mental health problem, A learning disability	1
A physical disability, A sensory disability	1
A sensory disability, A physical disability, Any other special need	1
Any other special need (please list in the 'Notes' section)	1
No disability	40
Grand Total	**56**